



National Institutes of Health

Avaya Wireless LAN Client Setup Procedures

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Center for Information Technology

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Document Change History

This section identifies all changes that have been incorporated into the *Avaya Wireless LAN Client Setup Procedures* since the original version.

Date	Version Number	Change Description
September 25, 2003	1.0	Original Version
October 29, 2003	1.1	Update “Introduction”. Add “Wireless Authentication Overview” and guest SSID and WEP key instructions.
January 20, 2004	1.2	Use Key #1 for WEP encryption key and transmit key for NIH users.
February 24, 2004	1.3	Update section 3.3 “Configuring Wireless Access Using Client Manager”.

1 Introduction

The National Institutes of Health (NIH) provides wireless access to NIH local area networks (LANs) at the Bethesda campus and certain off-campus locations. A wireless LAN is a flexible data communications system implemented as an extension to, or as an alternative for, a wired LAN. Using radio frequency (RF) technology, wireless LANs transmit and receive data over the air, minimizing the need for wired connections.

The NIH wireless LAN allows a multi-vendor environment. It is configured to use client adapters and access points from multiple vendors, so that any user's client adapter card can communicate with any vendor's access point, providing a seamless wireless network. The wireless LAN uses NIH-wide standard encryption standards as recommended by the National Institute of Standards and Technology (NIST). This ensures privacy of data, as required by the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

1.1 Purpose

This document provides standard operating procedures for installing and configuring the Avaya wireless client adapter driver for Windows (2000, NT, and XP) and Macintosh, and the Client Manager for Windows 2000, NT, and XP.

1.2 Scope

This document explains how to do the following tasks:

- Install the wireless client adapter driver
- Upgrade the wireless client adapter driver (where necessary)
- Install the Client Manager (not necessary for Macintosh)
- Configure wireless access for NIH user and guest/patient areas

1.3 Audience

These procedures are intended for LAN Administrators.

1.4 Materials Needed

To set up wireless access for Avaya wireless adapters you will need the following:

- ORiNOCO wireless client adapter card
- ORiNOCO wireless client adapter driver: on CD-ROM or downloaded from the NIH Information Systems Dedicated Procurement (iSDP) [Wireless LAN software page](#). On the software page go to "Avaya -- 802.11b Card" or "Avaya -- Platinum 802.11a-b Card" (as appropriate) and click the appropriate link for the operating system.

New Wireless Client Adapter Driver Version: Variant 2 Version: 7.62

- ORiNOCO Client Manager (on CD-ROM or downloaded from the iSDP [Wireless LAN software page](#). **Note:** A separate Client Manager is not required for Macintosh.

New Client Manager Software Version: Variant 1 Version: 2.92

1.5 Wireless Authentication Overview

In the NIH wireless LAN environment the various vendors' client adapters, client utilities, and access points are configured to communicate using the NIH standard secure access method. Two means are employed to secure data: 128-bit Wired Equivalent Privacy (WEP) encryption is used when the link is established between the wireless client and the access point. Virtual Private Networking (VPN) with Advanced Encryption Standard (AES) 256 bit or Triple Data Encryption Standard (3DES) 168 bit (depending on the client adapter used) is employed to encrypt NIH user data.

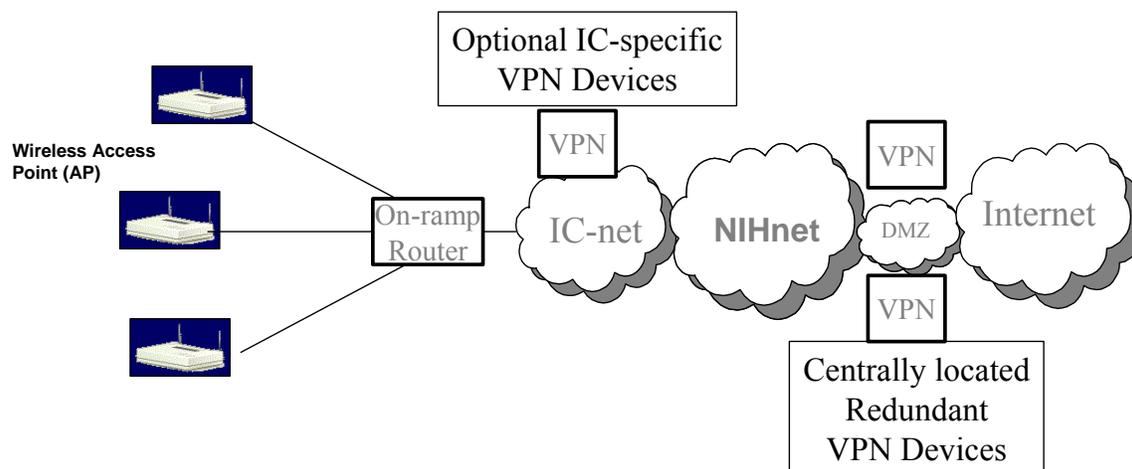
When the user turns on the computer, the wireless adapter tries to associate with the AP via WEP key and Service Set Identifier (SSID), and sends a Dynamic Host Configuration Protocol (DHCP) request to obtain an IP address from the DHCP server. The VPN client then connects to the VPN concentrator and the user signs on using the NT domain (Active Directory) credentials.

Users who are NIH employees authenticate through a VPN concentrator. NIH guests or patients authenticate through Wireless Gateway servers using assigned user names and passwords. Wireless Gateway-authenticated users have very limited Internet access, while VPN users have the same network access as wired users. **Note:** At the "Demilitarized Zone" (DMZ), security checks are applied to all traffic. If users do not authenticate through VPN or Wireless Gateway, their packets will be dropped at the wireless DMZ.

Authentication for NIH users connecting through the wireless LAN is the same as for users connecting via the wired network. The wireless VPN servers and Wireless Gateway participate in the single sign-on process, so that the same password is used to log on to both the wireless and wired networks.

The NIH wireless LAN is illustrated in Figure 1.

Figure 1. NIH Wireless LAN Overview



2 Windows 2000

In order for the ORiNOCO wireless adapter card to connect to the wireless LAN, the wireless client adapter driver and the Client Manager must be installed on the laptop. In Windows 2000 a wireless client adapter driver provided by Microsoft is installed automatically when you insert the ORiNOCO Wireless Adapter card. After this is done you must upgrade to the newer version of the driver provided by Avaya. Finally, you install the Client Manager and configure it for wireless access.

2.1 Installing and Upgrading the Wireless Client Adapter Driver

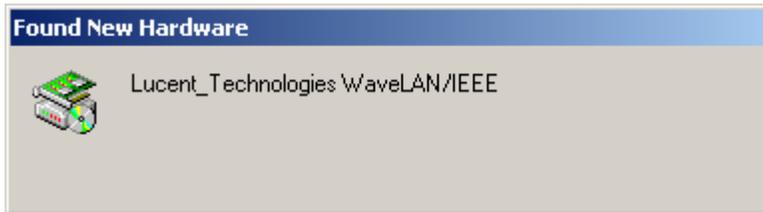
Install and update the client adapter driver for Windows 2000 as follows.

2.1.1 Installing Microsoft driver

Follow these steps to install the native (Microsoft) client adapter driver for Windows 2000.

1. Insert the ORiNOCO Wireless Adapter into the PCMCIA slot. Windows 2000 will detect this adapter and automatically install the native wireless adapter driver. The **Found New Hardware** window is displayed (Figure 2).

Figure 2. Found New Hardware Window



2. After the native driver is installed, the **System Settings Change** window is displayed automatically to ask you to restart the computer (Figure 3).

Figure 3. System Settings Change Window



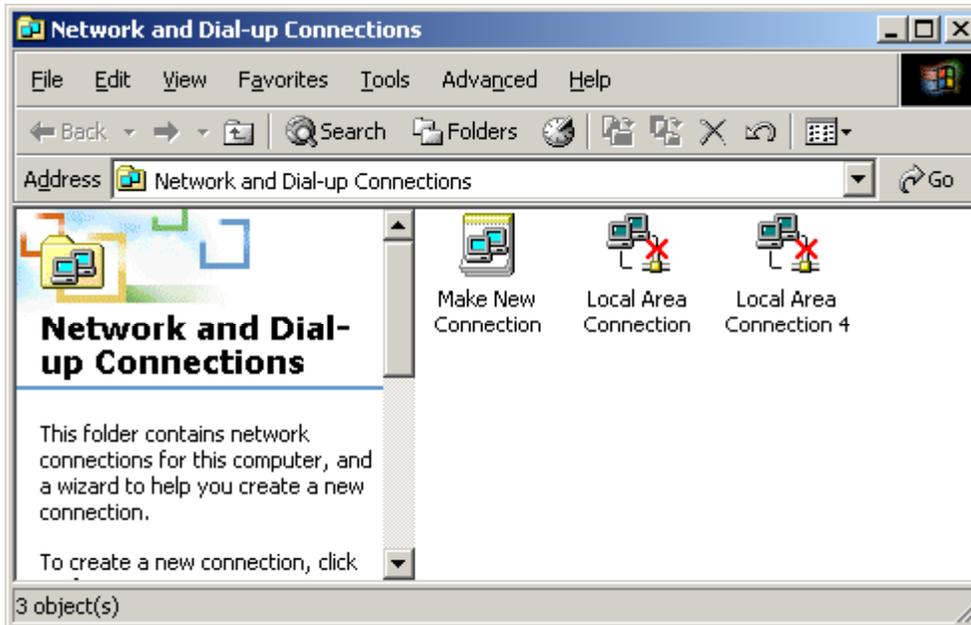
3. Click **Yes** to restart.

2.1.2 Upgrading to Avaya driver

Follow these steps to upgrade to the new driver version provided by Avaya.

1. After Windows restarts, click **Start** → **Settings** → **Network and Dial-up Connections**. The **Network and Dial-up Connections** window is displayed (Figure 4).

Figure 4. Network and Dial-up Connections Window



2. Double click one of the **Local Area Connection** icons. The **Local Area Connection Properties** window is displayed (Figure 5).

Figure 5. Local Area Connection Properties Window



On the **General** tab make sure that the **Connect using** box contains:

WaveLAN/IEEE PC Card

If it does not, you must **Cancel** and go back to the **Network and Dial-up Connections** window (Figure 4) and double click a different **Local Area Connection** icon.

3. Click the **Configure** button. The **WaveLAN/IEEE PC Card Properties** window is displayed (Figure 6).

Figure 6. WaveLAN/IEEE PC Card Properties Window



4. Click the **Driver** tab.
5. Click the **Update Driver** button. The **Upgrade Device Driver Wizard** window is displayed (Figure 7).

Figure 7. Upgrade Device Driver Wizard Window



6. Click **Next**. The **Install Hardware Device Drivers** window is displayed (Figure 8).

Figure 8. Install Hardware Device Drivers Window



7. Select **Search for a suitable driver for my device (recommended)**.
8. Click **Next**. The **Locate Driver Files** window is displayed (Figure 9). Under **Optional search locations** several choices are listed for the new driver.

Figure 9. Locate Driver Files Window



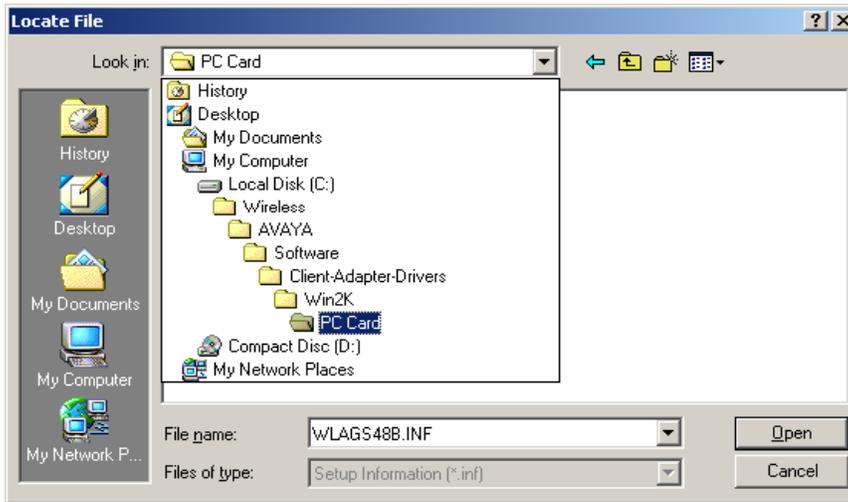
9. Uncheck the **Microsoft Windows Update** checkbox.
10. Select the appropriate option as follows:
 - a. Check the **CD-ROM drives** checkbox if you plan to install the new driver from a CD-ROM. Otherwise, uncheck this box.
 - b. Check the **Specify a location** checkbox if the new driver is downloaded and stored on the hard disk of your computer.
11. Click **Next**. The **Upgrade Device Driver Wizard** window is displayed (Figure 10).

Figure 10. Upgrade Device Driver Wizard Window



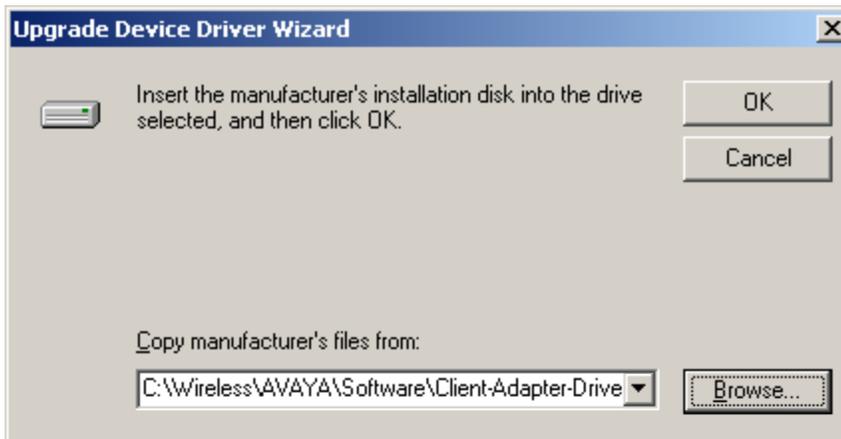
12. Click **Browse** and locate the new driver in the **Locate File** window (Figure 11).

Figure 11. Locate File Window



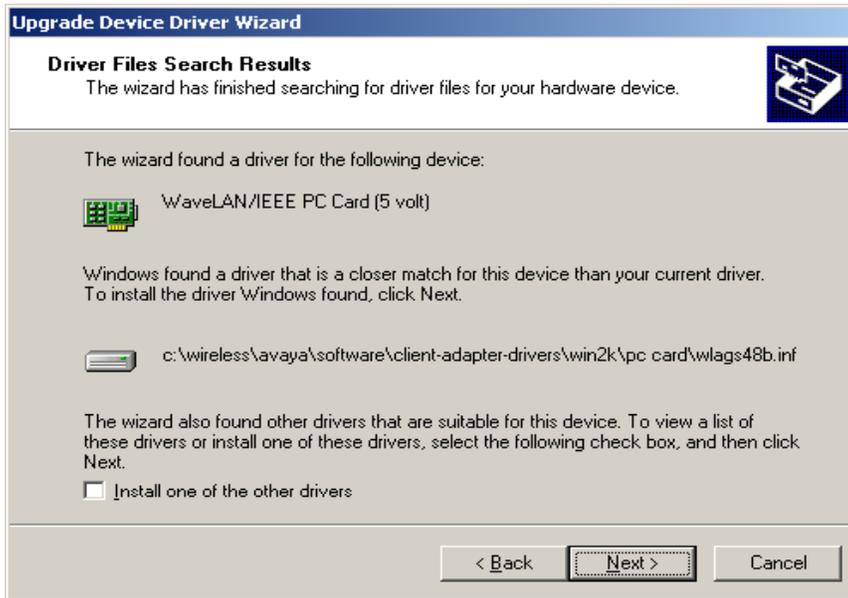
13. Click **Open**. The **Upgrade Device Driver Wizard** window is displayed (Figure 12).

Figure 12. Upgrade Device Driver Wizard Window



14. Click **OK**. The **Driver Files Search Results** window is displayed (Figure 13).

Figure 13. Driver Files Search Results Window



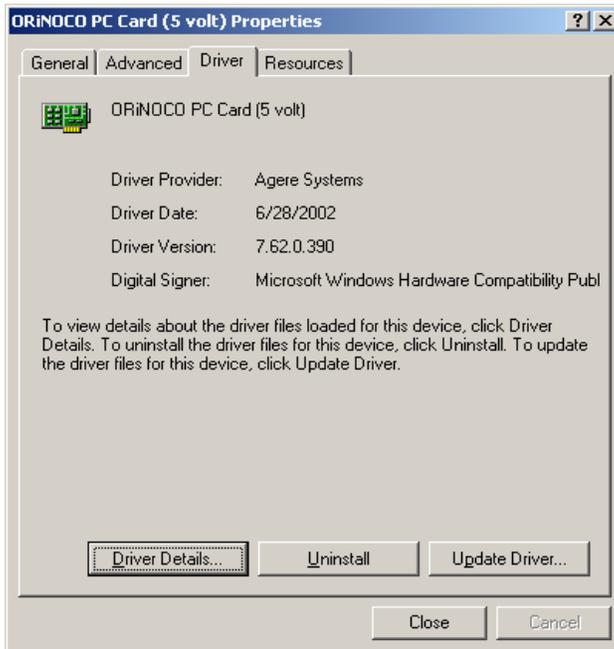
15. Click **Next**. Windows installs the new driver. After the installation, the **Completing the Upgrade Device Driver Wizard** window is displayed (Figure 14).

Figure 14. Completing the Upgrade Device Driver Wizard Window



16. Click **Finish**. The **ORiNOCO PC Card Properties** window is displayed again with the new driver version information (Figure 15).

Figure 15. ORiNOCO PC Card Properties Window



17. Click **Close** and then click **OK** to exit the **ORiNOCO PC Card (5 volt) Properties** window. You have successfully installed the new driver for the wireless client adapter. Go to section 2.2 to install the Client Manager and configure wireless access.

2.2 Installing Client Manager and Configuring Wireless Access

Follow these steps to install the Client Manager and configure wireless access.

2.2.1 Installing Client Manager

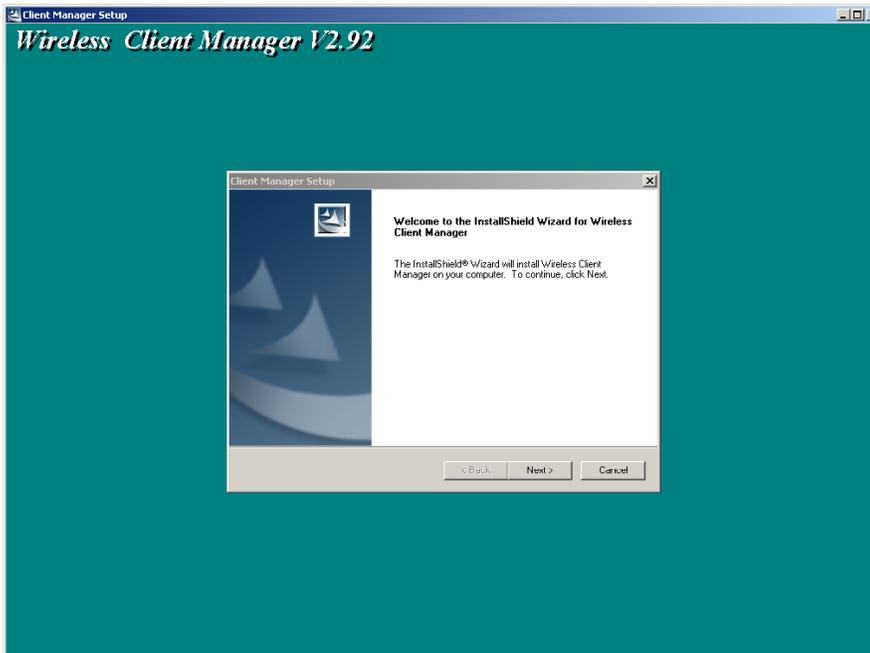
Follow these steps to install the Client Manager.



Setup.exe

1. Open the **Client Manager** folder, then click the **Setup** icon . The **Wireless Client Manager Setup** window is displayed (Figure 16).

Figure 16. Wireless Client Manager Setup Window

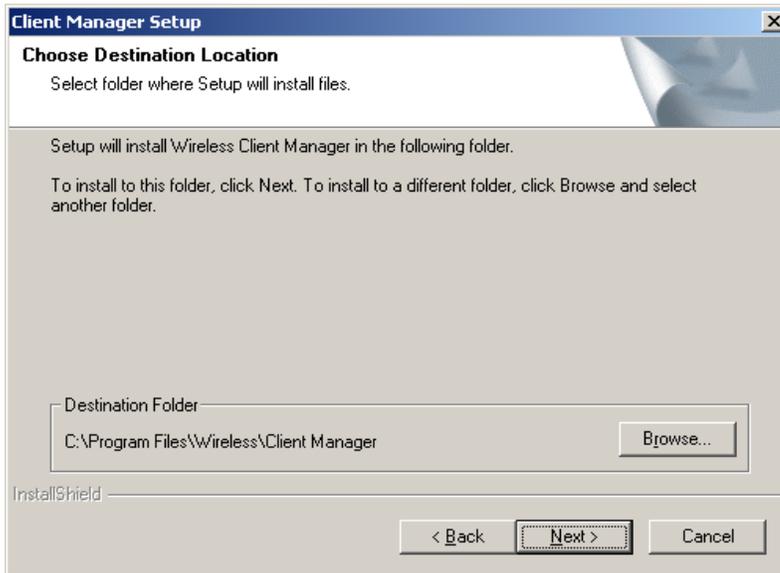


2. Click **Next**. The **Client Manager Setup/License Agreement** window is displayed (Figure 17).

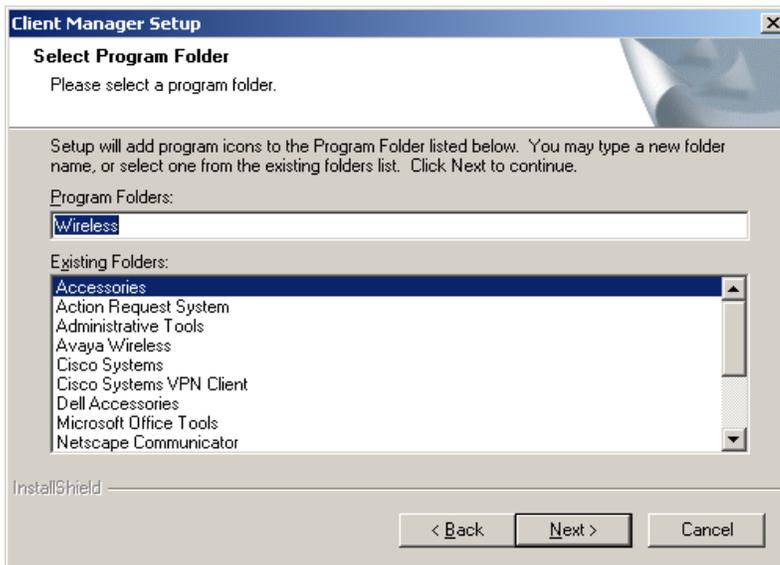
Figure 17. License Agreement Window



3. Click **Yes**. The **Client Manager Setup/Choose Destination Location** window is displayed (Figure 18).

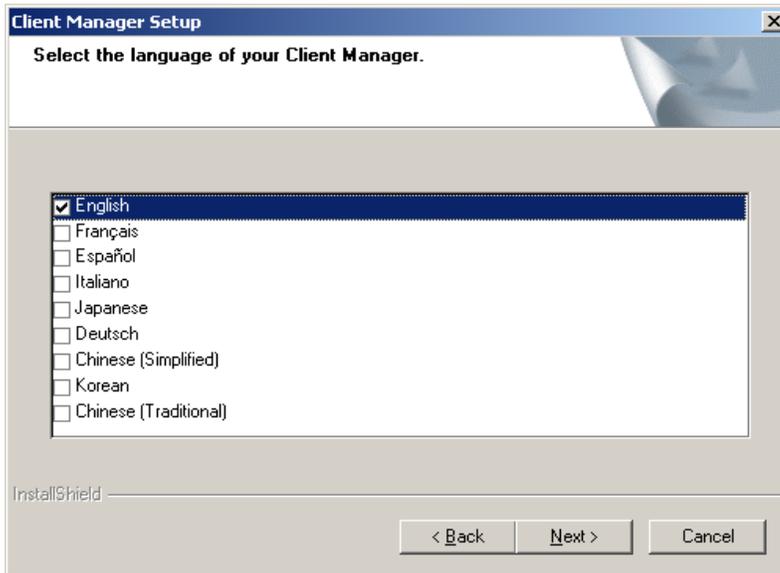
Figure 18. Client Manager Setup/Choose Destination Location Window

4. Click **Next**. The **Client Manager Setup/Select Program Folder** window is displayed (Figure 19).

Figure 19. Client Manager Setup/Select Program Folder Window

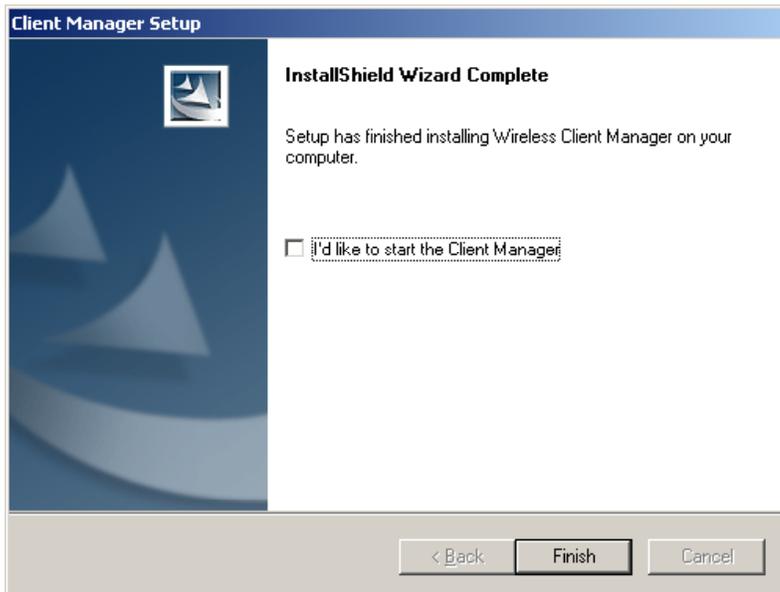
5. Click **Next**. The **Client Manager Setup/Select the language of your Client Manager** window is displayed (Figure 20).

Figure 20. Client Manager Setup/Select the language of your Client Manager Window



6. Check the **English** checkbox.
7. Click **Next**. The **InstallShield Wizard Complete** window is displayed (Figure 21).

Figure 21. InstallShield Wizard Complete Window



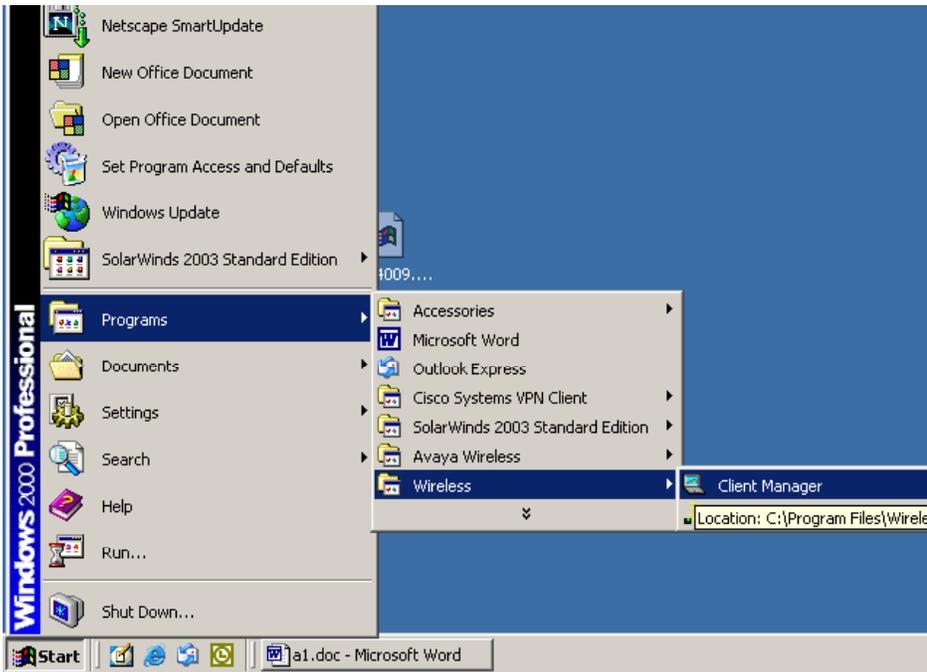
8. Make sure that **I'd like to start the Client Manager** is *not* checked.
9. Click **Finish**.
10. Restart the computer. You have successfully installed the Client Manager. Go to section 2.2.2 to configure wireless access.

2.2.2 Configuring wireless access using Client Manager

Follow these steps to configure wireless access in both NIH user and guest/patient areas.

1. On your desktop, click **Start** → **Programs** → **Wireless** → **Client Manager** (Figure 22).

Figure 22. Client Manager Menu



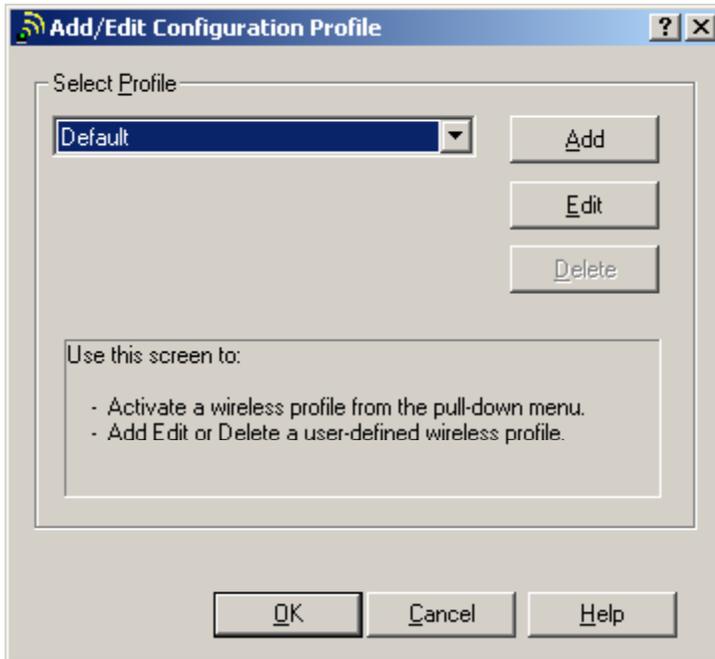
2. The **Wireless Client Manager** window is displayed (Figure 23).
3. Select **Actions** on the menu bar, then select **Add/Edit Configuration Profile**.

Figure 23. Wireless Client Manager/Actions Menu



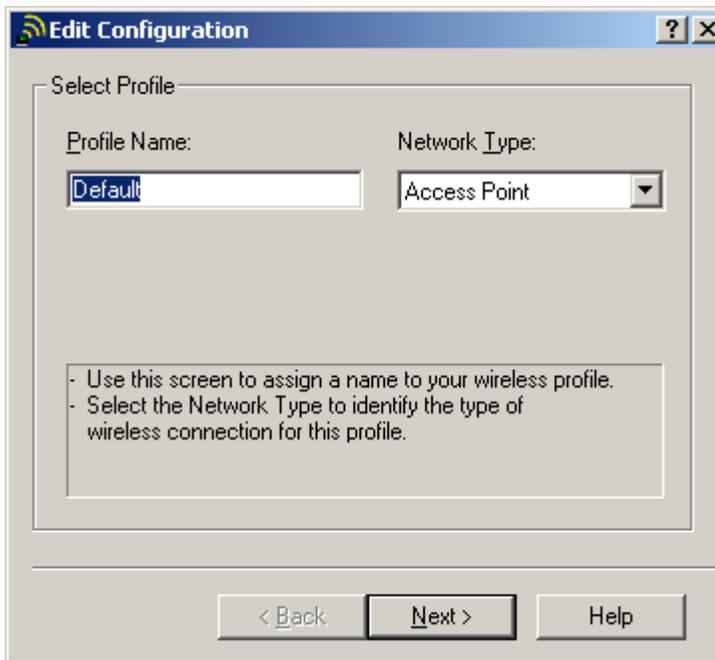
4. The **Add/Edit Configuration Profile** window is displayed (Figure 24).

Figure 24. Add/Edit Configuration Profile Window



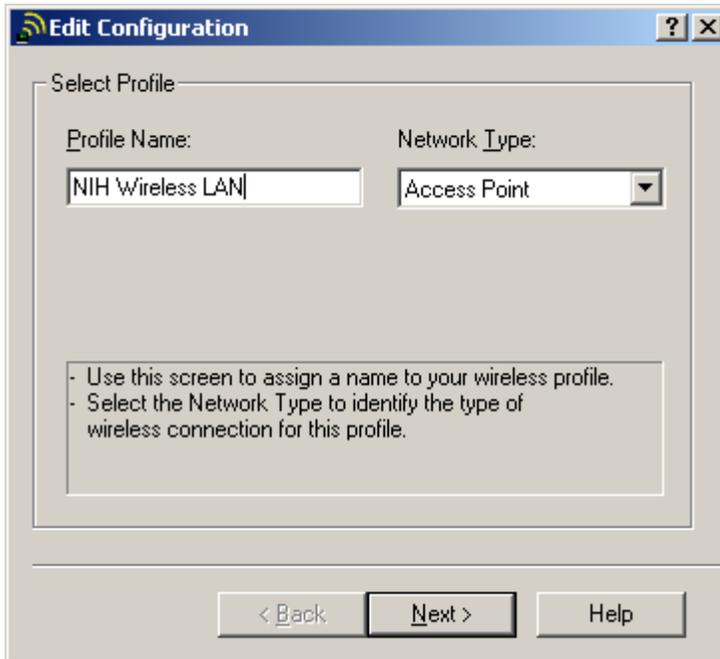
5. Click **Edit**. The **Edit Configuration/Select Profile** window is displayed with **Default** in the **Profile Name** box (Figure 25).

Figure 25. Edit Configuration/Select Profile Window (Default)



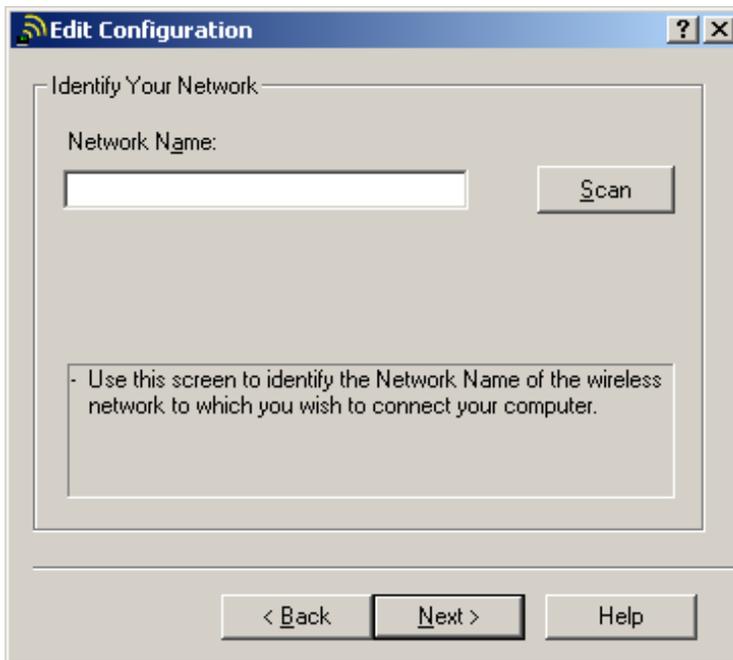
- a. In the **Profile Name** box replace the default profile name with a name that has meaning to you (Figure 26).
- b. Example: NIH Wireless LAN. In the **Network Type** box, select **Access Point** from the drop-down menu.

Figure 26. Edit Configuration/Select Profile Window (NIH Wireless LAN)



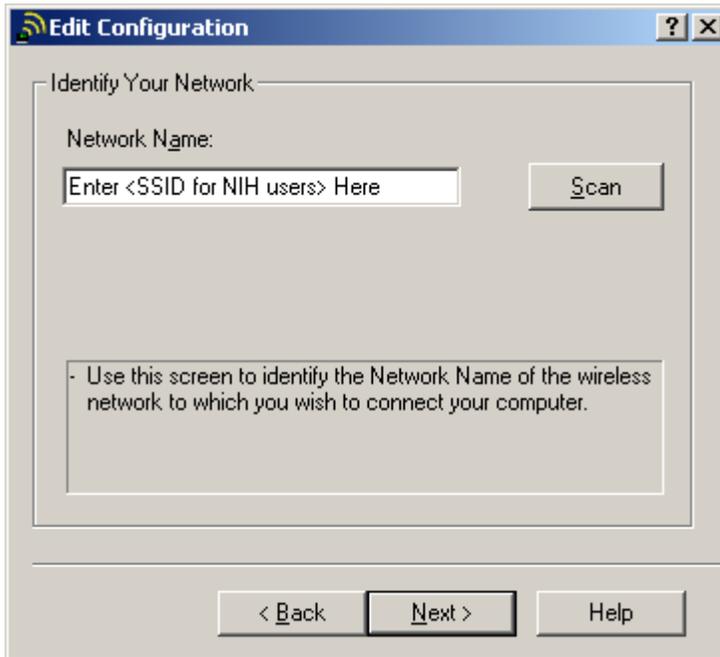
6. Click **Next**. The **Edit Configuration/Identify Your Network** window is displayed (Figure 27).

Figure 27. Edit Configuration/Identify Your Network Window (blank)



7. In the **Network Name** box enter the *<NIH standard SSID for NIH users>* (Figure 28).

Figure 28. Edit Configuration/Identify Your Network Window (NIH Standard SSID for NIH users)



8. Click **Next**. The **Edit Configuration/Set Security** window is displayed (Figure 29).

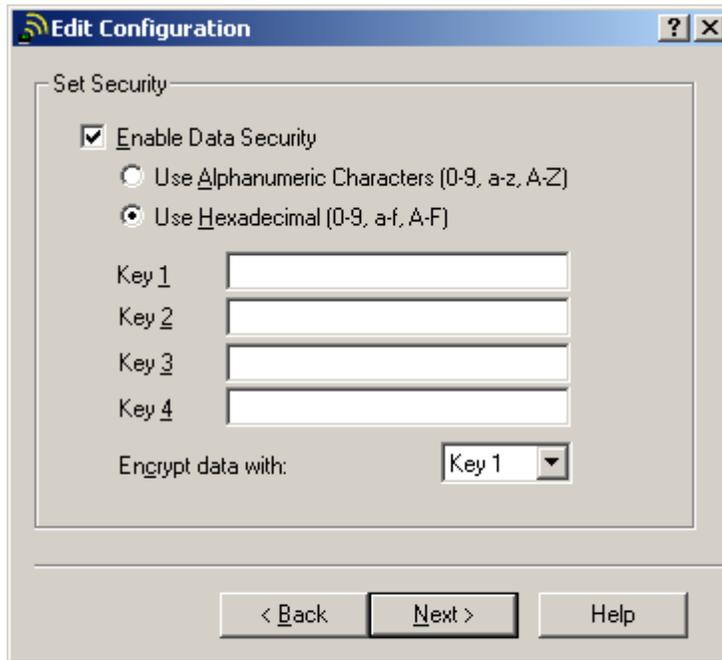
Figure 29. Edit Configuration/Set Security Window (blank)



- a. Check the **Enable Data Security** checkbox (Figure 30).
- b. Select **Use Hexadecimal (0-9, a-f, A-F)**.
- c. In the **Key 1** box enter the *<NIH standard WEP encryption key>*.

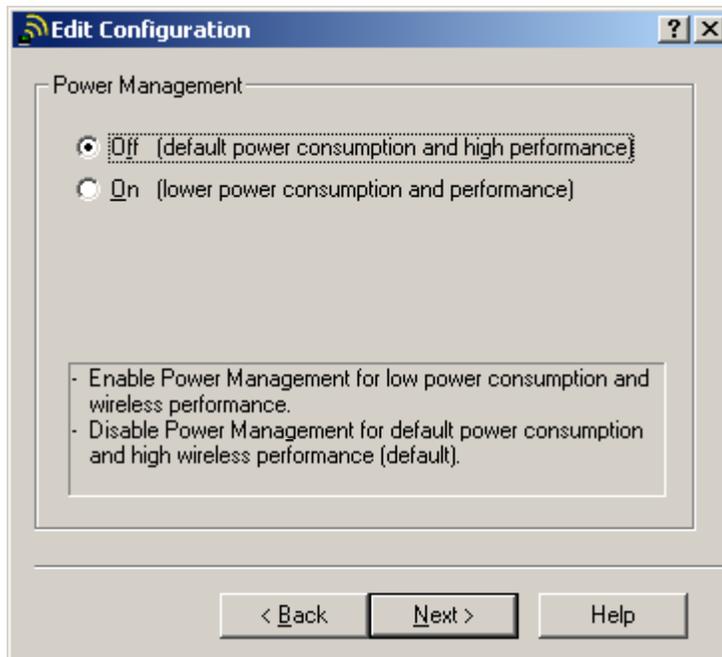
- d. In the **Encrypt data with** box select **Key 1** from the drop-down menu.

Figure 30. Edit Configuration/Set Security Window



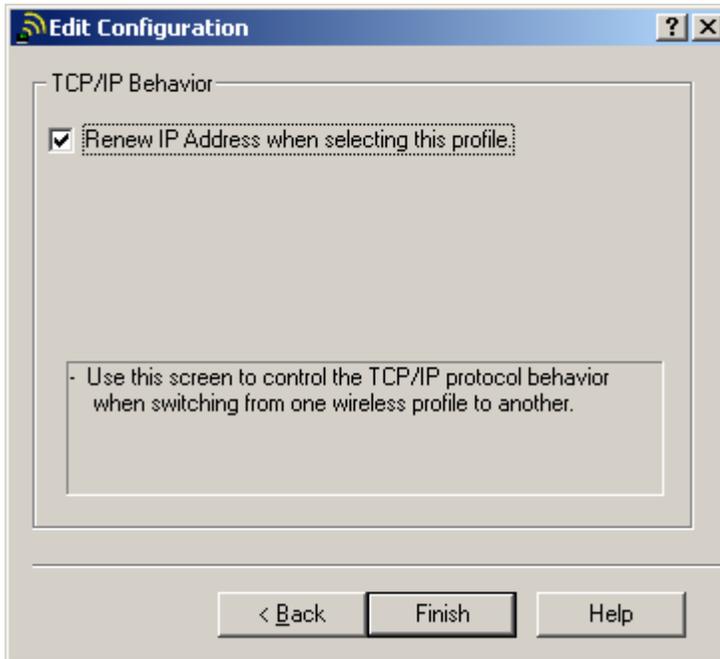
9. Click **Next**. The **Edit Configuration/Power Management** window is displayed (Figure 31).

Figure 31. Edit Configuration/Power Management Window



10. Select **Off (default power consumption and high performance)**.
11. Click **Next**. The **Edit Configuration/TCP/IP Behavior** window is displayed (Figure 32).

Figure 32. Edit Configuration/TCP/IP Behavior Window



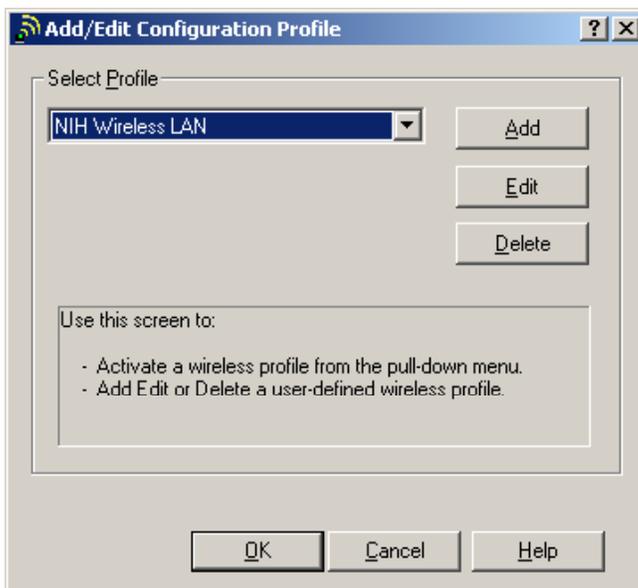
12. Check **Renew IP Address when selecting this profile.**

13. Click **Finish**. You have finished configuring wireless access for NIH user areas.

The following steps explain how to configure a profile for accessing the wireless LAN in guest and patient areas.

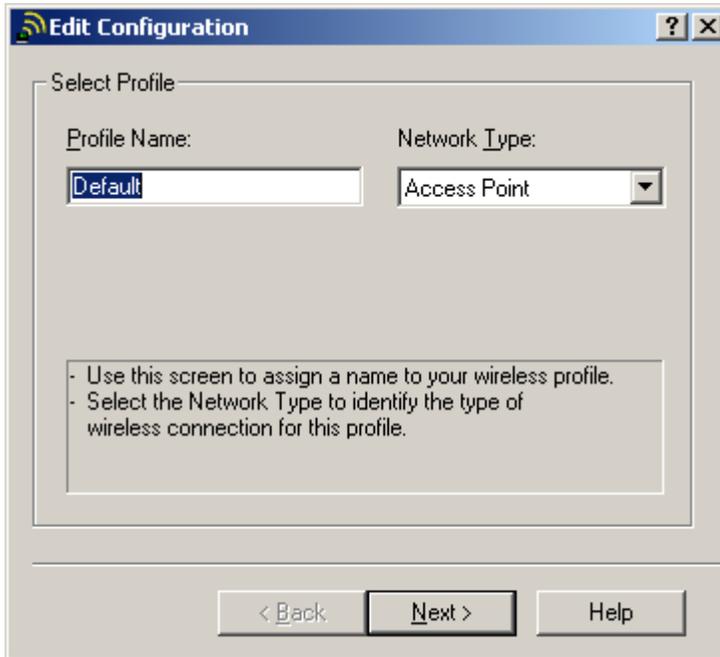
14. In the **Wireless Client Manager** window (Figure 23) click **Actions** on the menu bar. Select **Add/Edit Configuration Profile**. The **Add/Edit Configuration Profile** window is displayed (Figure 33).

Figure 33. Add/Edit Configuration Profile Window



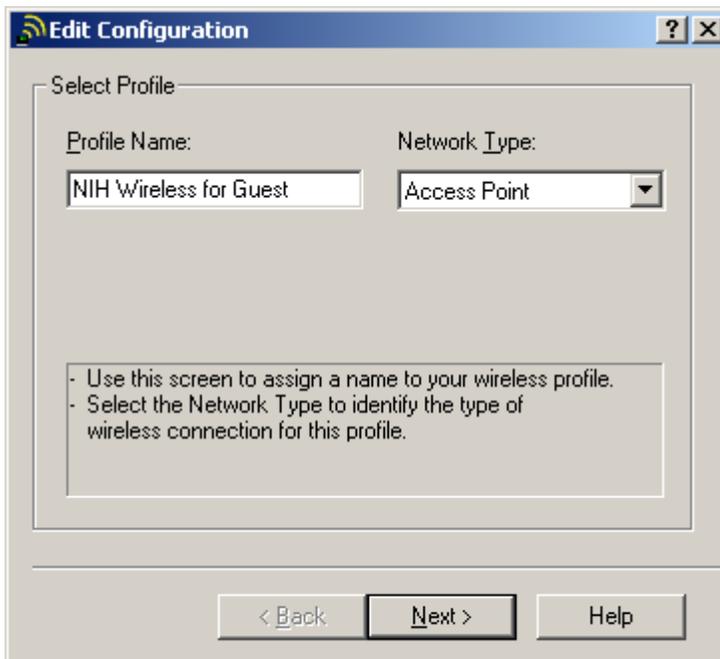
15. Click **Add**. The **Edit Configuration/Select Profile** window is displayed with **Default** in the **Profile Name** box (Figure 34).

Figure 34. Edit Configuration Window (Default)



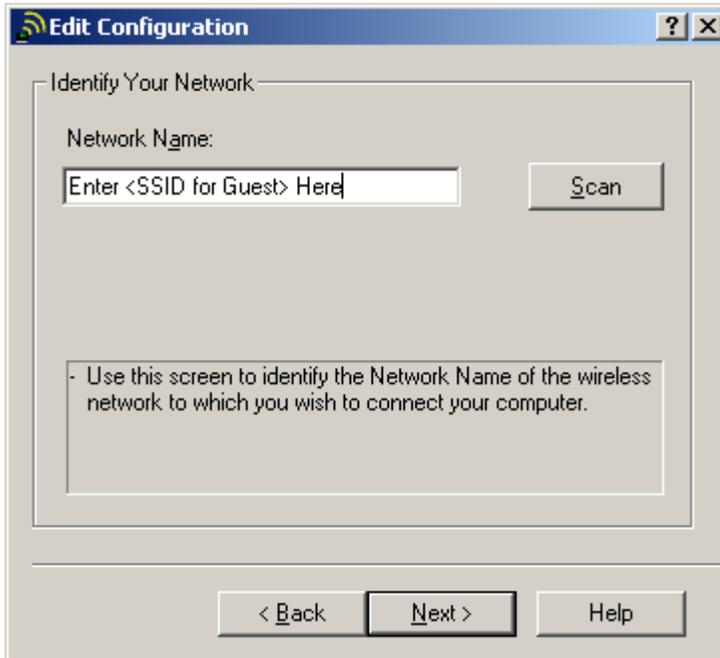
- a. In the **Profile Name** box enter a meaningful name for the profile (Figure 35).
Example: NIH Wireless for Guest
- b. In the **Network Type** box make sure that you select **Access Point**.

Figure 35. Edit Configuration Window (NIH Wireless for Guest)



16. Click **Next**. The **Edit Configuration/Identify Your Network** window is displayed (Figure 36).
17. In the **Network Name** box enter the *<NIH standard SSID for guest>*.

Figure 36. Edit Configuration/Identify Your Network Window



18. Click **Next**. The **Edit Configuration/Set Security** window is displayed (Figure 37).

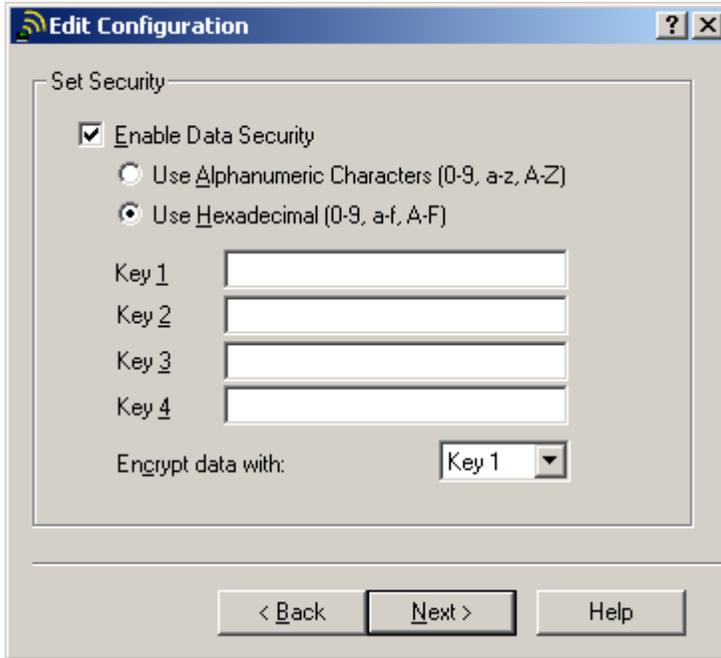
Figure 37. Edit Configuration/Set Security Window (blank)



- a. Check the **Enable Data Security** checkbox (Figure 38).

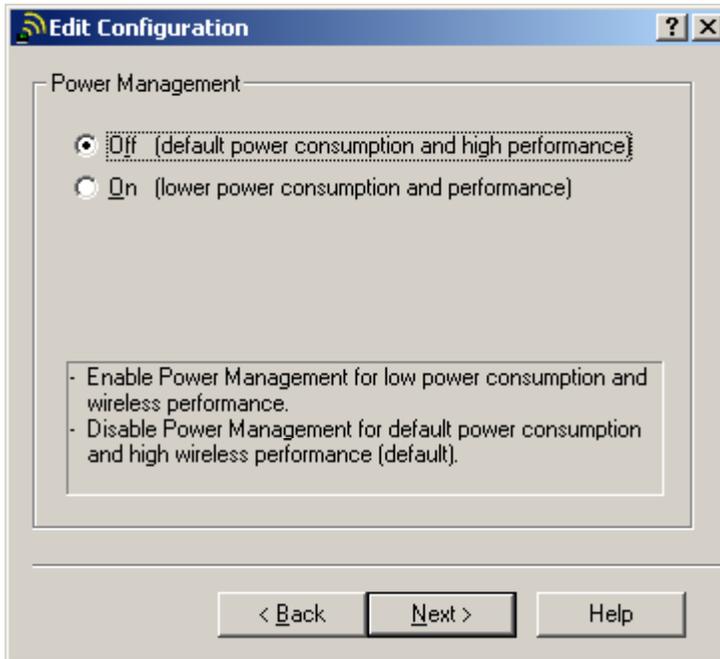
- b. Select the **Use Hexadecimal (0-9, a-f, A-F)** option.
- c. In the **Key 1** box enter the <NIH standard WEP encryption key>.
- d. In the **Encrypt data with** box select **Key 1** from the drop-down menu.

Figure 38. Edit Configuration/Set Security Window



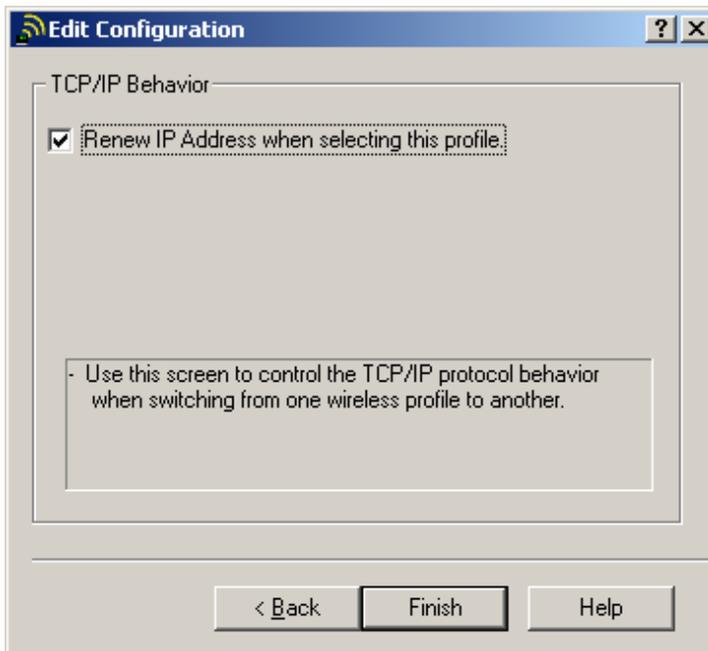
- 19. Click **Next**. The **Edit Configuration/Power Management** window is displayed (Figure 39).
- 20. Select **Off**.

Figure 39. Edit Configuration/Power Management Window



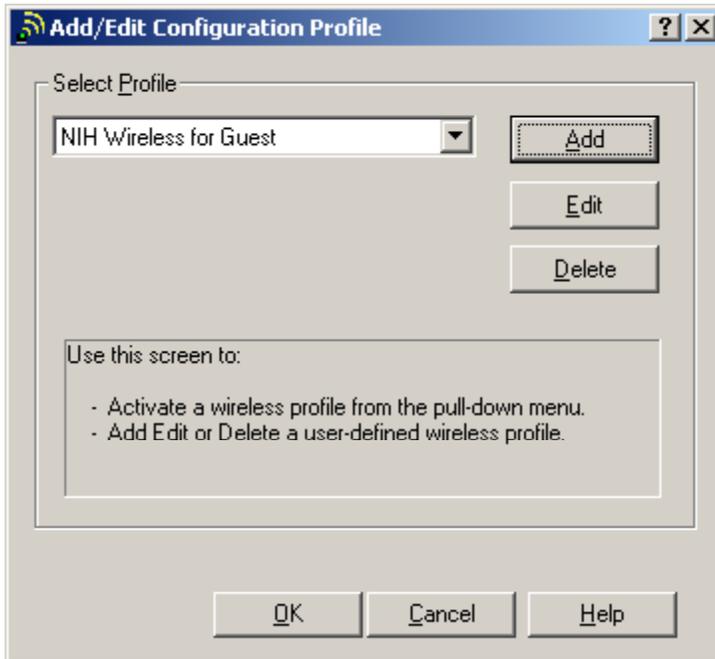
21. Click **Next**. The **Edit Configuration/TCP/IP Behavior** window is displayed (Figure 40).
22. Check **Renew IP Address when selecting this profile**.

Figure 40. Edit Configuration/TCP/IP Behavior Window



23. Click **Finish**. The **Add/Edit Configuration Profile** window is displayed (Figure 41).

Figure 41. Add/Edit Configuration Profile/Select Profile Window



24. Click **OK** to finish. The **TCP/IP** window is displayed (Figure 42).

Figure 42. TCP/IP Window – Waiting for Wireless Connection



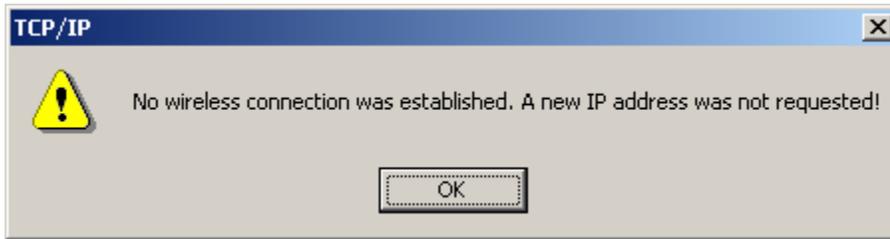
25. Click **Close**. The **Wireless Client Manager** window is displayed (Figure 43).

Figure 43. Wireless Client Manager Window



If you do not click **Close**, the following window is displayed (Figure 44).

Figure 44. TCP/IP Window – No Wireless Connection



Click **OK** to continue. The **Wireless Client Manager** window is displayed.

26. On the menu bar click **Actions** → **Select Configuration Profile**. Select the **NIH Wireless** profile (Figure 45) to connect to the wireless LAN for NIH users.

Figure 45. Wireless Client Manager – Actions Menu



You have successfully configured wireless access for the NIH user and guest/patient wireless LANs. When you enter a guest/patient wireless LAN area, follow step 26 and select the **NIH Wireless for Guest** profile.

3 Windows XP

In Windows XP you must perform three steps to install the correct client adapter driver and configure wireless access:

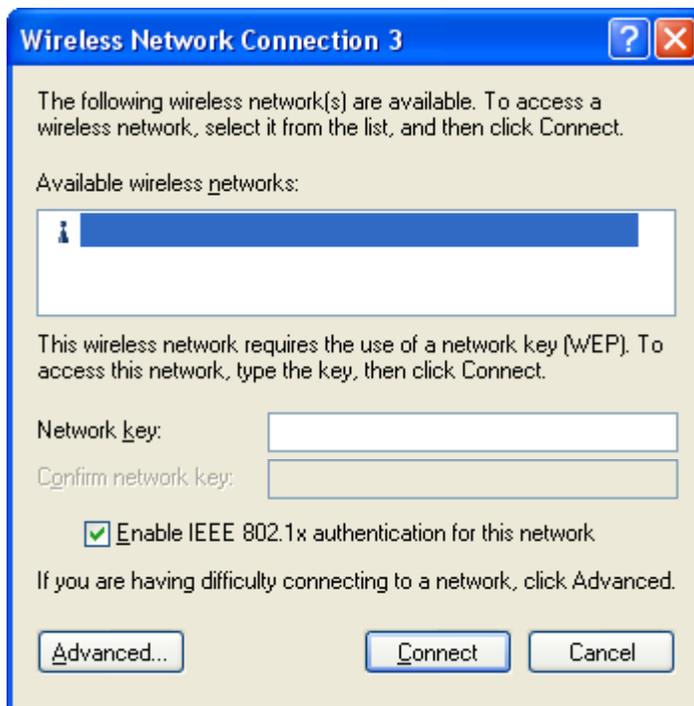
- Install Microsoft-provided driver and upgrade driver to Avaya version
- Install Client Manager
- Configure wireless access

3.1 Installing and Upgrading the Wireless Client Adapter Driver

Follow these steps to install the native (Microsoft) wireless adapter driver and upgrade to the Avaya driver.

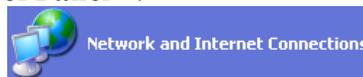
1. Insert the ORiNOCO Wireless Adapter into the PCMCIA slot. Windows XP will detect this adapter and automatically install the native wireless adapter driver.
2. After the native driver is installed, the **Wireless Network Connection** window is displayed automatically (Figure 46).

Figure 46. Wireless Network Connection Window



3. Click **Cancel**.
4. On the Desktop click **Start** → **Control Panel** →

Network and Internet Connections



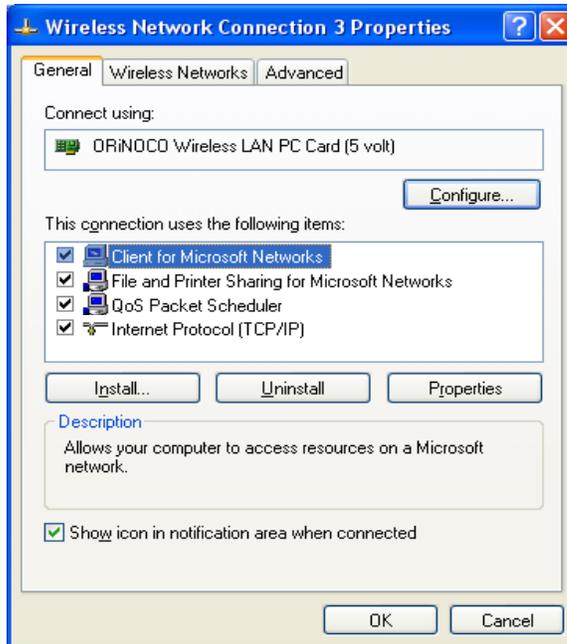
Network Connections  →

Wireless Network icon 

The **Wireless Network Connection** window is displayed (see Figure 46).

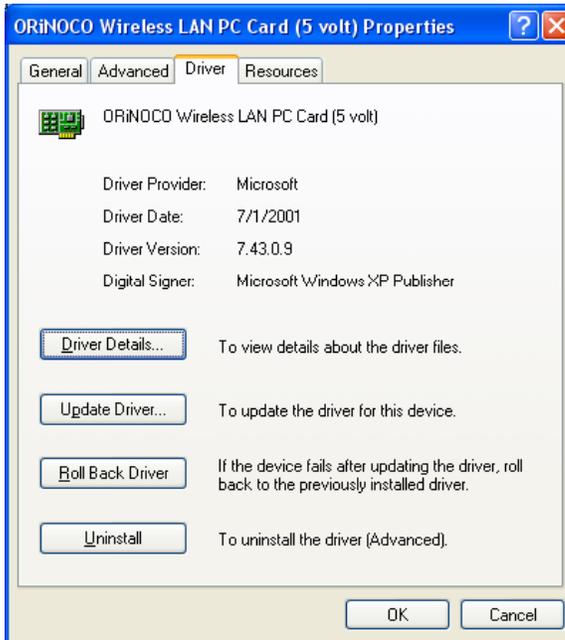
5. Click the **Advanced** button. The **Wireless Network Connection Properties** window is displayed (Figure 47).

Figure 47. Wireless Network Connection Properties Window



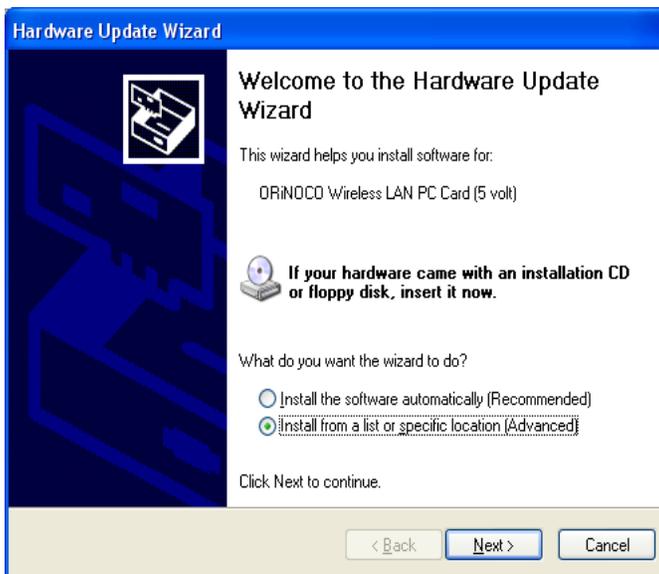
6. Click the **Configure** button. The **ORiNOCO Wireless LAN PC Card Properties** window is displayed.
7. Click the **Driver** tab to upgrade the Windows native driver to the new/current wireless adapter driver (Figure 48).

Figure 48. ORiNOCO Wireless LAN PC Card Properties Window

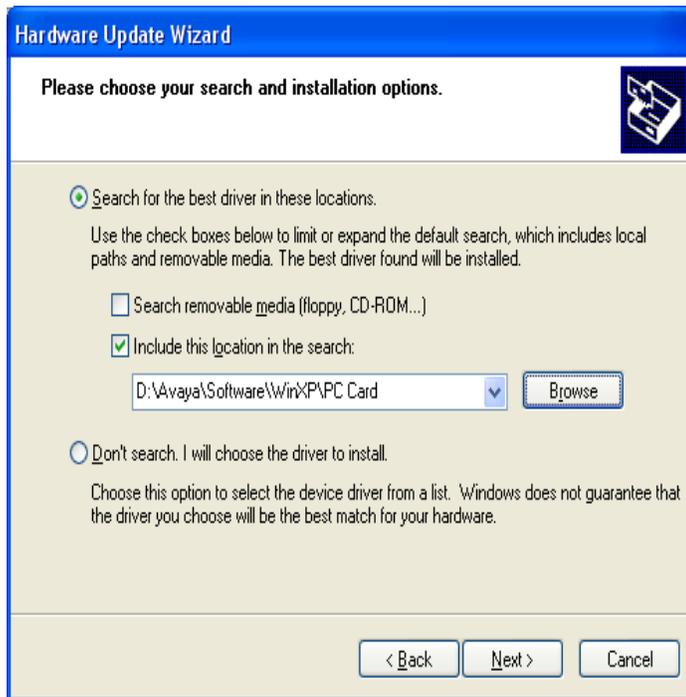


8. Click the **Update Driver** button. The **Hardware Update Wizard** window is displayed (Figure 49).

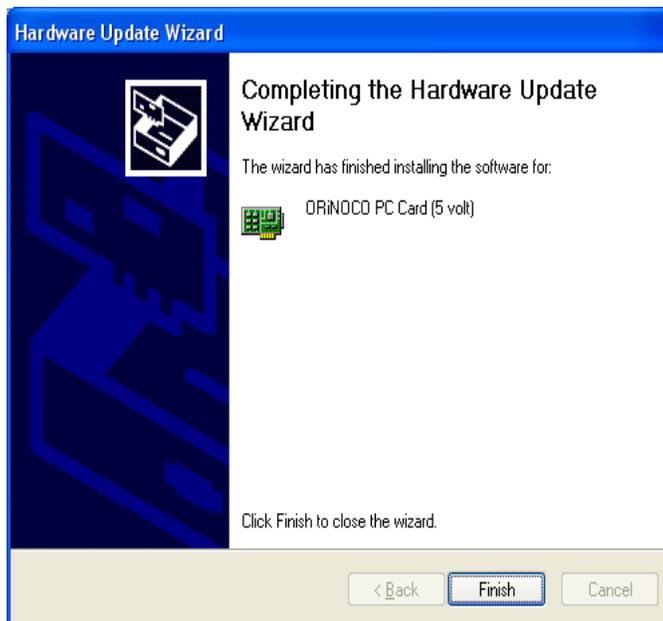
Figure 49. Hardware Update Wizard Window



9. Select **Install from a list or specific location (Advanced)**.
10. Click **Next**. The **Search and Installation Options** window is displayed (Figure 50).
11. Under **Search for the best driver in these locations**, select **Search removable media (floppy, CD-ROM)** if you plan to install the new driver from the CD-ROM drive. If you downloaded the new driver from the Avaya Web site and saved it on your computer, then select **Include this location in the search** and click **Browse** to browse to the directory containing the new driver file.

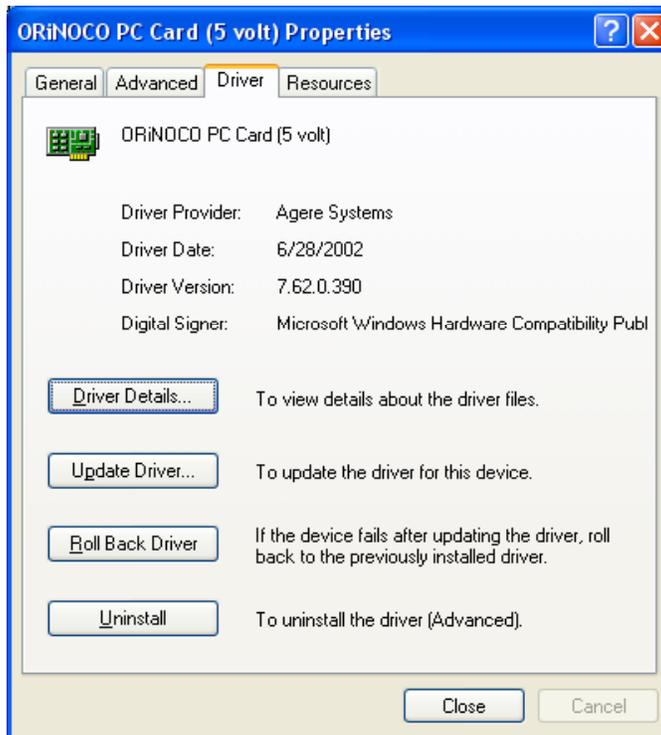
Figure 50. Hardware Update Wizard/Search and Installation Options Window

12. Click **Next**. After Windows updates the new driver, the **Completing the Hardware Update Wizard** window is displayed (Figure 51).

Figure 51. Completing the Hardware Update Wizard Window

13. Click **Finish**. The **ORiNOCO PC Card Properties** window is displayed again, showing the new driver version information (Figure 52).

Figure 52. ORiNOCO PC Card Properties Window



14. Click **Close**. You have completely upgraded the new driver for the wireless client adapter. Continue with section 3.2 to install the Client Manager.

3.2 Installing the Client Manager for Windows XP

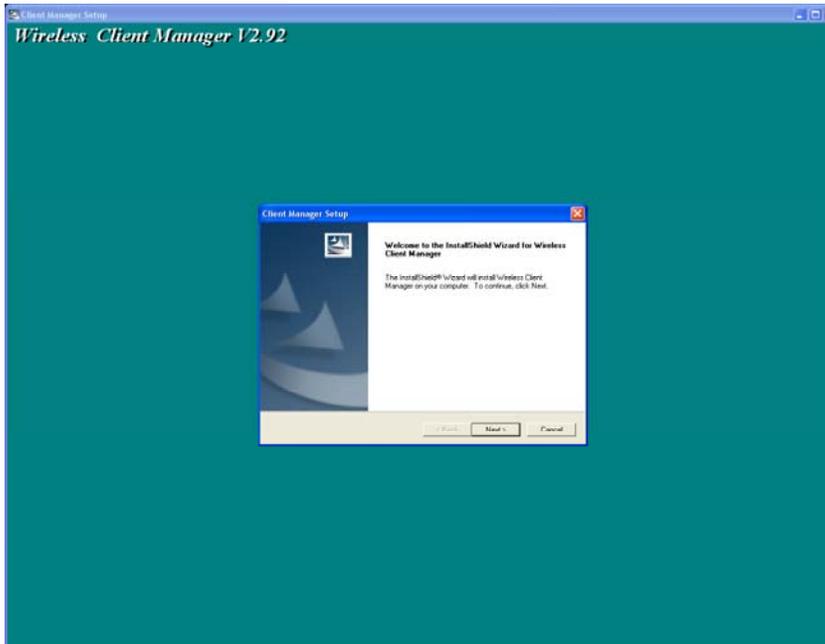
Follow these steps to install the Client Manager.

1. Open the Client Utility folder.



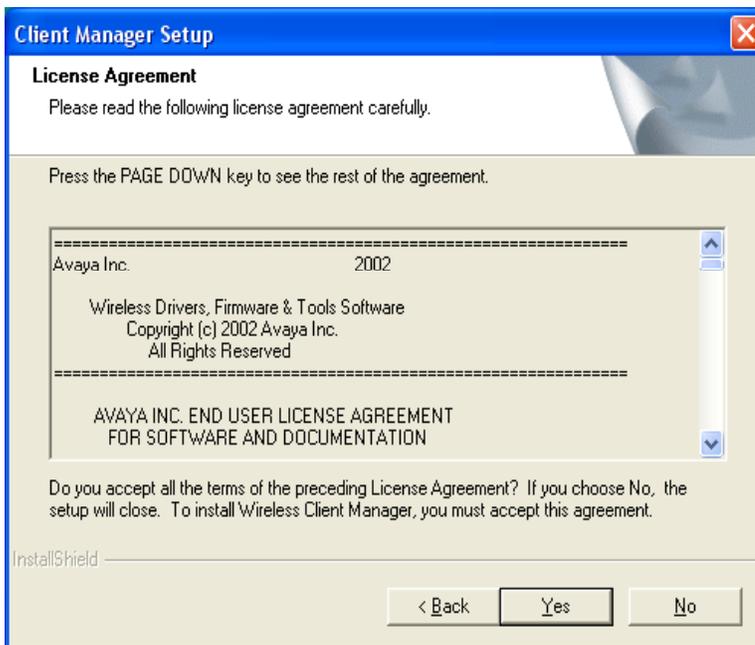
2. Double click the **Setup.exe** icon Setup.exe.
3. The **Wireless Client Manager/Client Manager Setup** window is displayed (Figure 53).

Figure 53. Wireless Client Manager/Client Manager Setup Window

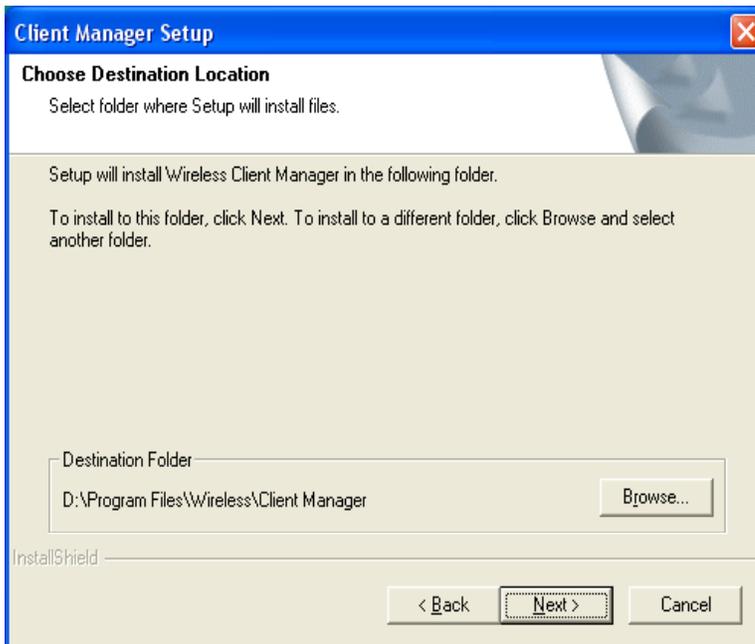


4. Click **Next**. The **Client Manager Setup/License Agreement** window is displayed (Figure 54).

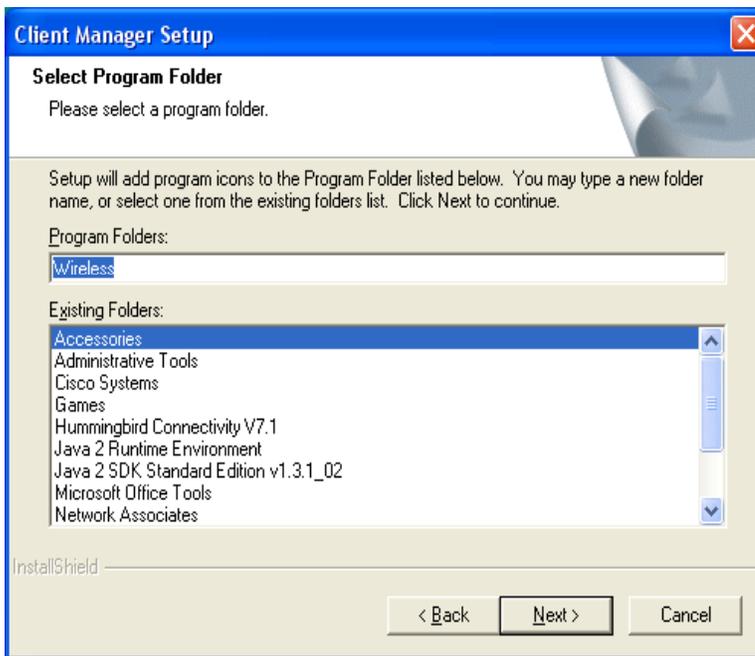
Figure 54. Client Manager Setup/License Agreement Window



5. Click **Yes**. The **Client Manager Setup/Choose Destination Location** window is displayed (Figure 55).

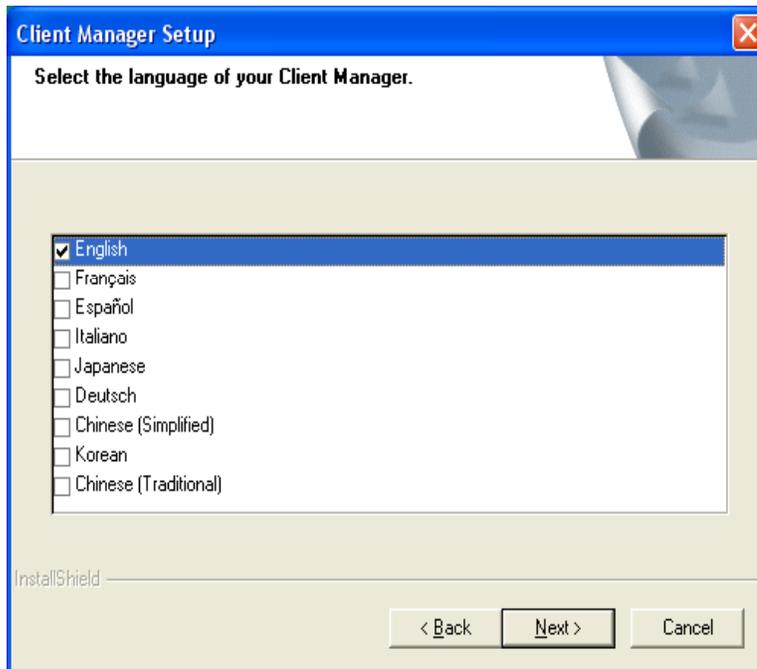
Figure 55. Client Manager Setup/Choose Destination Location Window

6. Click **Next**. The **Client Manager Setup/Select Program Folder** window is displayed (Figure 56).

Figure 56. Client Manager Setup/Select Program Folder Window

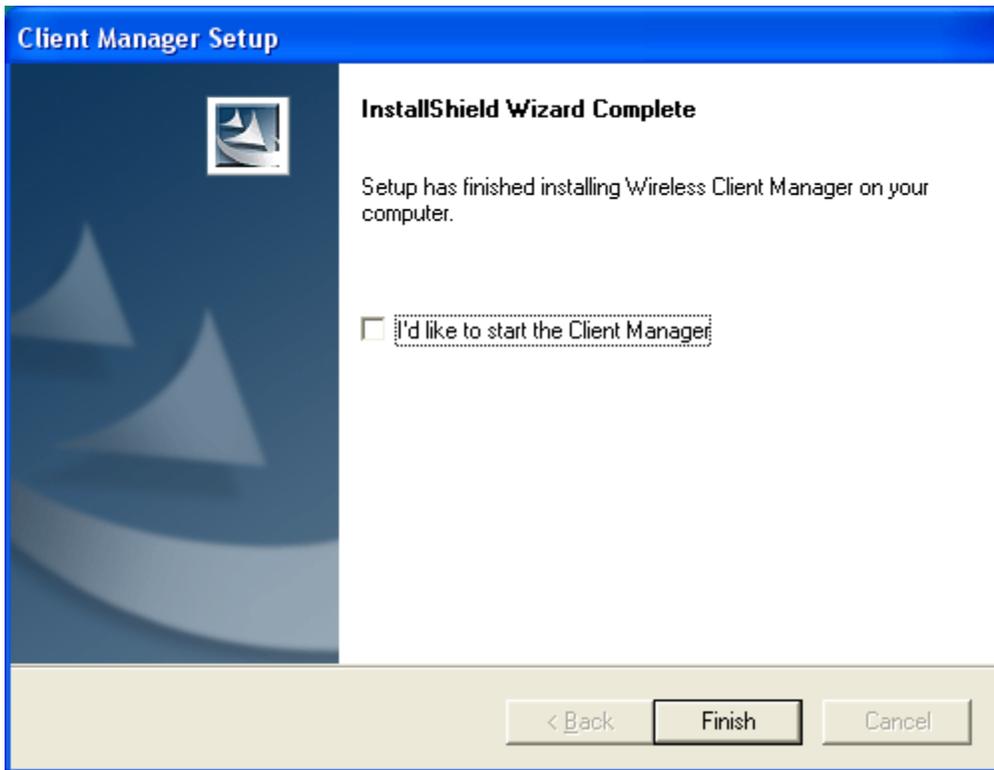
7. Click **Next**. The **Client Manager Setup/Select the language of your Client Manager** window is displayed (Figure 57).
8. Check the **English** checkbox.

Figure 57. Client Manager Setup/Select the language of your Client Manager Window



9. Click **Next**. The **Client Manager Setup/InstallShield Wizard Complete** window is displayed (Figure 58).
10. Make sure that **I'd like to start the Client Manager** is *not* checked.
11. Click **Finish**.

Figure 58. Client Manager Setup/InstallShield Wizard Complete Window



12. **Restart** the computer. You have successfully installed the Client Manager. Continue with section 3.3 to configure wireless access.

3.3 Configuring Wireless Access Using Client Manager

Follow these steps to configure wireless access. You will set up two profiles: one for NIH users and one for access in guest/patient areas.

1. On your desktop, click **Start** → **Programs** → **Wireless** → **Client Manager**.

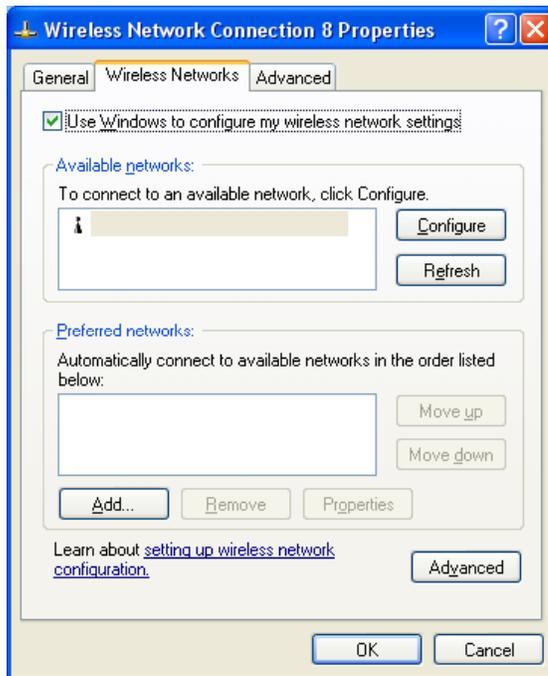
The **Wireless Client Manager** window is displayed (Figure 59).

Figure 59. Wireless Client Manager window



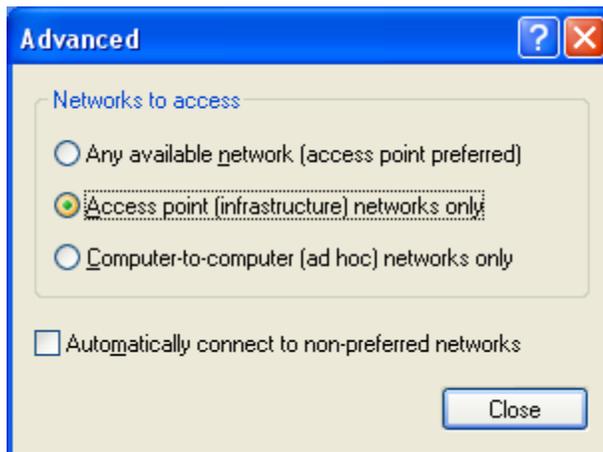
2. Select **Actions** on the menu bar and select **Add/Edit Configuration Profile**. The **Wireless Network Connection Properties** window is displayed (Figure 60).

Figure 60. Wireless Network Connection Properties Window



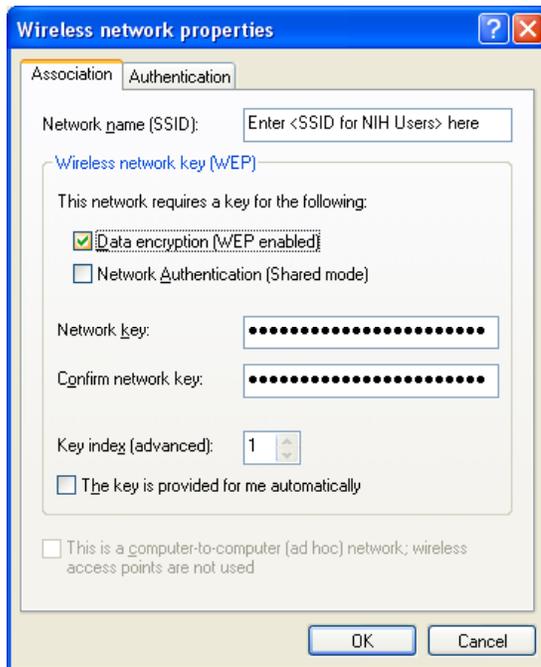
3. On the **Wireless Networks** tab, click **Advanced** at the bottom right corner. The **Advanced** window is displayed.
4. On the **Advanced** window, select **Access point (infrastructure) networks only** (Figure 61).

Figure 61. Advanced Window With Change

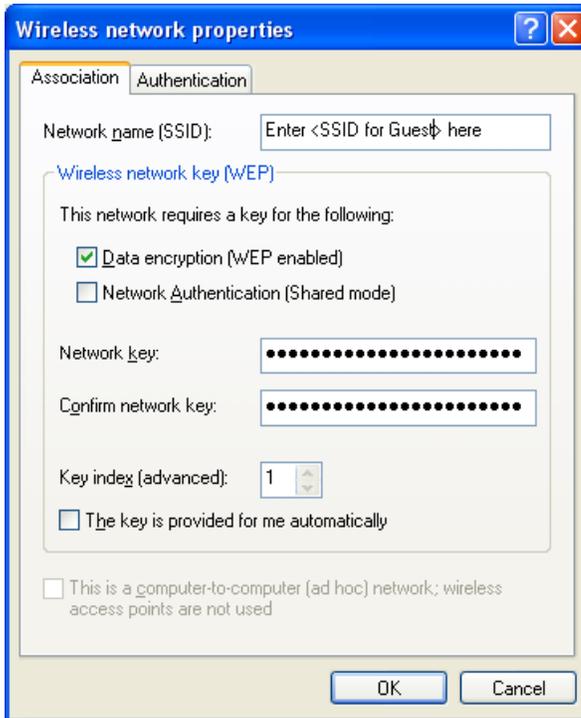


5. Click **Close** to return to the previous window (Figure 60).
6. On the **Wireless Network Connection Properties** window, click the **Add** button. The **Wireless network properties window/Association tab** is displayed (Figure 62).

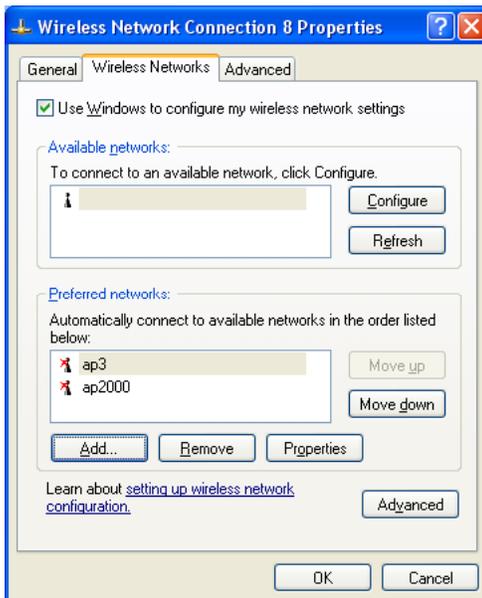
Figure 62. Wireless Network Properties Window/Association Tab



- a. In the **Network name (SSID)** box enter the *<NIH standard SSID for NIH users>*.
 - b. Check the **Data encryption (WEP enabled)** checkbox.
 - c. Uncheck **The key is provided for me automatically**.
 - d. In the **Network key** and **Confirm network key** boxes enter the *<NIH standard WEP encryption key>*.
 - e. In the **Key index (advanced)** box select **1**.
7. Click **OK** to save and return to the previous window.
- Now you need to add a second profile for access to the wireless LAN in guest and patient areas.
8. On the **Wireless Network Connection Properties** window click **Add**. The **Wireless Network Properties Window/Association** tab is displayed (Figure 63).
 - a. Enter the *<NIH standard SSID for guest>* in the **Network name (SSID)** box.
 - b. Uncheck **The key is provided for me automatically**. The **Network key** and **Confirm network key** options will become active.
 - c. Enter the *<NIH standard WEP encryption key>* in the **Network key** and **Confirm network key** boxes.
 - d. In the **Key index (advanced)** box select **1** from the drop-down menu.

Figure 63. Wireless Network Properties Window/Association Tab

9. Click **OK** to finish configuring the profile for wireless access in guest and patient areas. The **Wireless Network Connection Properties/Wireless Networks** window is redisplayed, showing the SSIDs that were added earlier (Figure 64).

Figure 64. Wireless Network Connection Properties/Wireless Networks With Changes

Note: This figure is just an example. The information shown on your system will be different.

10. On the **Wireless Network Connection Properties/Wireless Networks** window, click **OK** to save all changes.

Congratulations! Now, the wireless client should be able to associate automatically with one of the access points, depending on your location: NIH users area or guest/patient area.

4 Windows NT

In Windows NT, perform two steps to install the correct client adapter driver and configure wireless access:

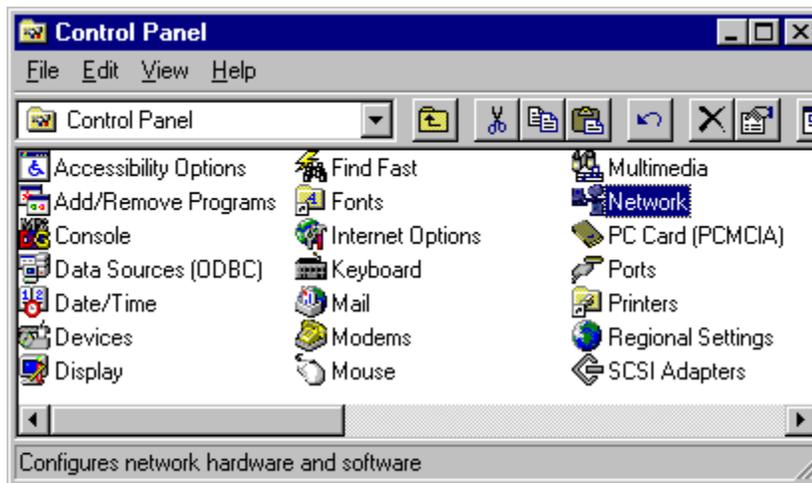
- Install the Avaya wireless client adapter driver
- Configure wireless access

4.1 Installing the Wireless Client Adapter Driver

This section will guide you through how to install the Avaya Client Adapter driver on Windows NT.

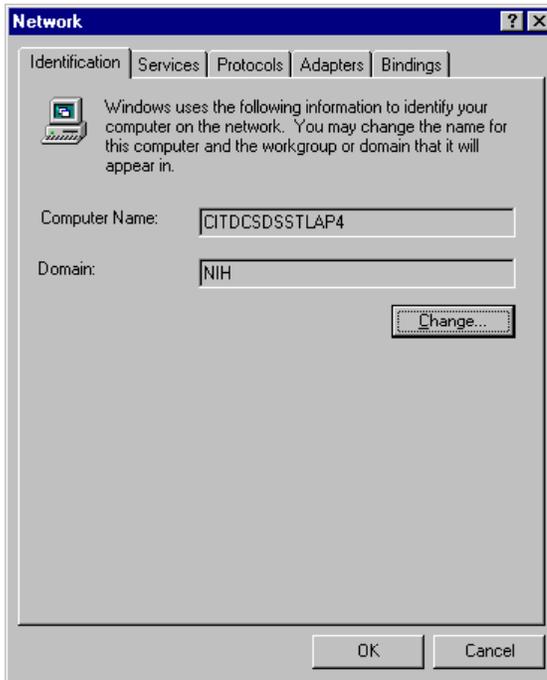
1. Download the client driver and utility from http://sdp.cit.nih.gov/downloads/wireless_lan.asp.
2. Unzip the AV_WINNT_PC_SFTX_SR0201.zip file to a desired folder.
3. Insert the client adapter into the PCMCIA slot.
4. Click **Start** → **Control Panel**.

Figure 65. Control Panel/Network Icon



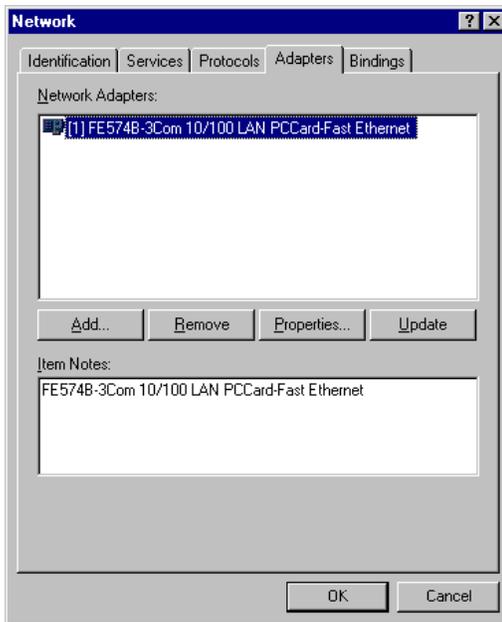
5. Double click the **Network** icon (Figure 65). The **Network** window is displayed (Figure 66).

Figure 66. Network Window



6. Click the **Adapters** tab (Figure 67).

Figure 67. Network Window/Adapters Tab



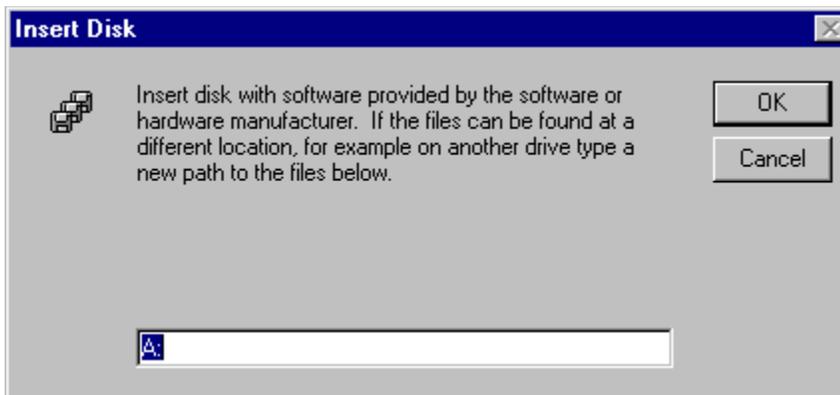
7. Click **Add**. The **Select Network Adapter** window is displayed (Figure 68).

Figure 68. Select Network Adapter Window



8. Click **Have Disk**. The **Insert Disk** window is displayed (Figure 69).

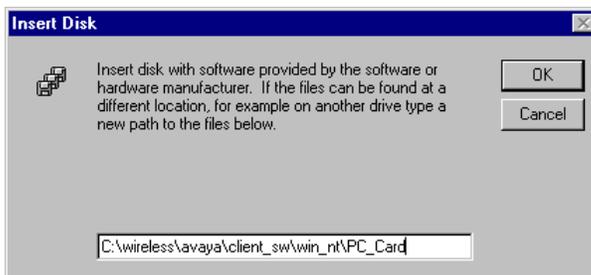
Figure 69. Insert Disk Window



9. On the **Insert Disk** window, enter the full path to where the driver file is stored (Figure 70). For example:

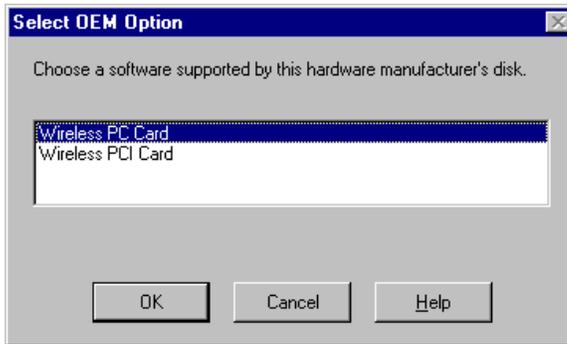
```
C:\wireless\avaya\client_sw\win_nt\PC_Card
```

Figure 70. Insert Disk Window: Driver Path



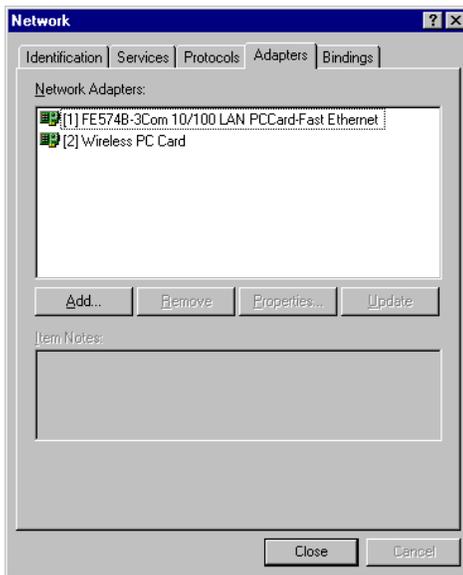
10. Click **OK**. The **Select OEM Option** window is displayed (Figure 71).

Figure 71. Select OEM Option Window

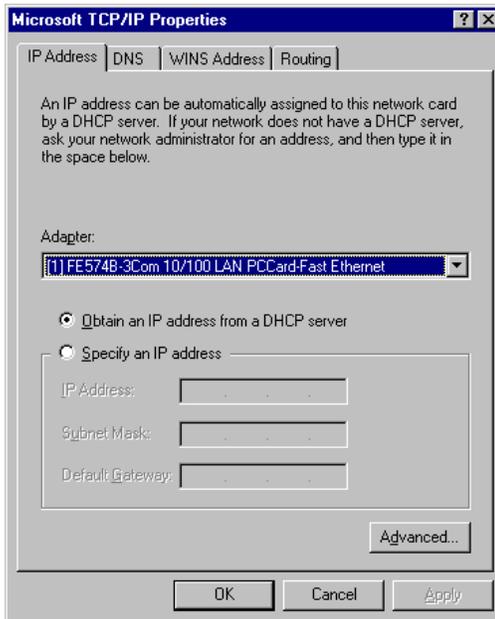


11. Select **Wireless PC Card** and click **OK**. The system starts to copy files. You will be returned to the **Network** window after the installation process is completed (Figure 72).

Figure 72. Network Window

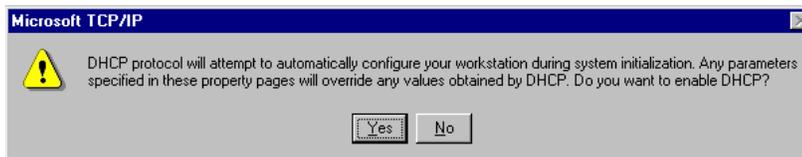


12. Click **Close**. The system starts to install and configure additional files for the wireless adapter. During this process, the **Microsoft TCP/IP Properties** window is displayed (Figure 73).

Figure 73. Microsoft TCP/IP Properties Window

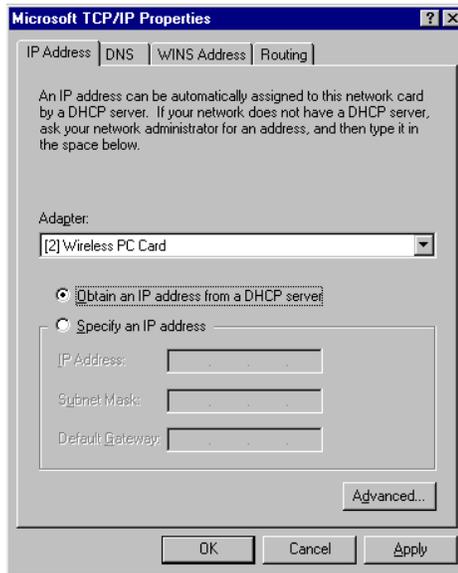
13. On the **IP Address** tab, in the **Adapter** box, follow the instructions in either step a or step b:
 - a. If another network interface card was installed previously, select the wireless PC card from the drop-down menu. Select **Obtain an IP address from a DHCP server**.

The following warning window will be displayed (Figure 74).

Figure 74. Microsoft TCP/IP Warning Window

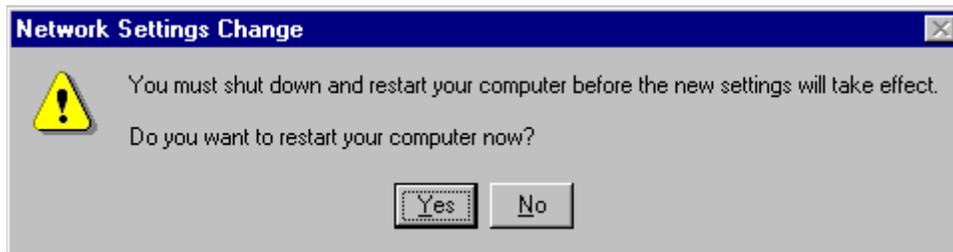
Click **Yes** to continue. The **Microsoft TCP/IP Properties** window is displayed (Figure 75).

Figure 75. Microsoft TCP/IP Properties Window



Click **OK**. The system starts installing and configuring the wireless client adapter. After this process is completed, you will be prompted to restart the computer (Figure 76).

Figure 76. Network Settings Change Window



Click **Yes** to restart.

- b. If no other network interface card was installed previously, select **Obtain an IP address from a DHCP server** on the **Microsoft TCP/IP Properties** window (Figure 73). You may receive the following Microsoft TCP/IP warning window (Figure 77). If so, click **Yes** to continue and you will be returned to the **Microsoft TCP/IP Properties** window (Figure 78).

Figure 77. Microsoft TCP/IP Warning Message

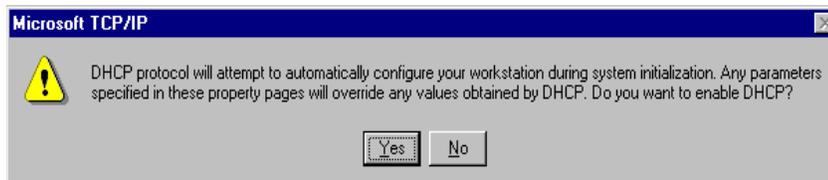
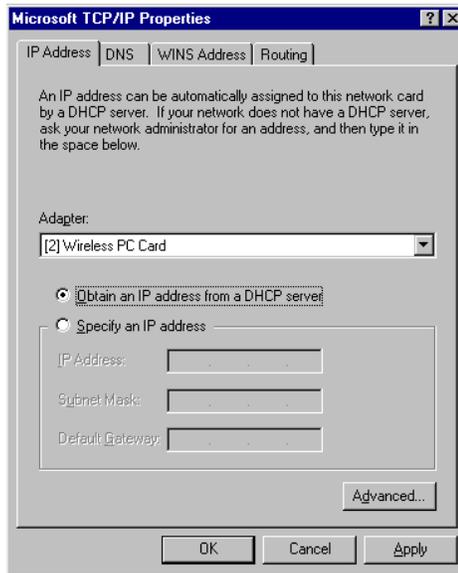
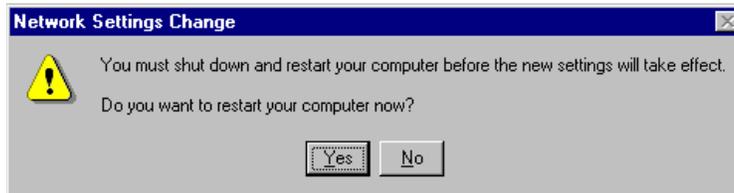


Figure 78. Microsoft TCP/IP Properties Window

Click **OK** to continue. The system starts to configure the wireless client adapter. After this process is completed, you will be prompted to restart the computer (Figure 79).

Figure 79. Network Settings Change Window

Click **Yes** to restart.

14. After the computer restarts, log in to the system. You should see a green light on the client adapter. This means that the driver has been installed and configured correctly.

Congratulations! You have successfully installed the driver for the wireless client adapter. Continue with section 4.2 to configure wireless access.

4.2 Configuring Wireless Access for Windows NT

Follow these steps to configure wireless access.

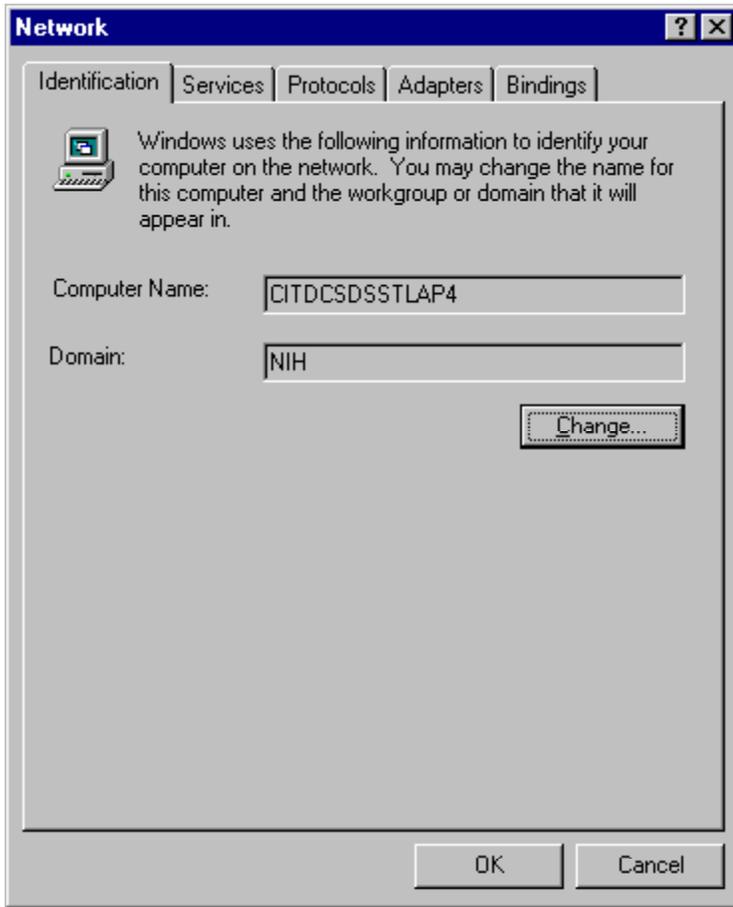
1. On the desktop right click the **Network Neighborhood** icon (Figure 80).

Figure 80. Network Neighborhood Icon



2. Scroll down to select **Properties**. The **Network** window is displayed (Figure 81).

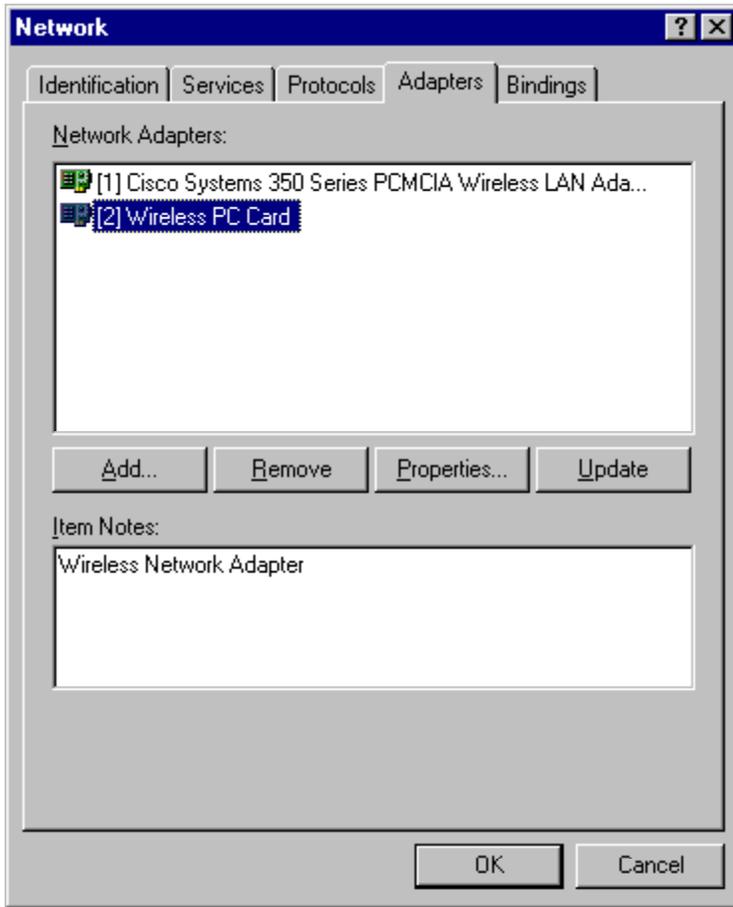
Figure 81. Network Window



3. Select the **Adapters** tab and highlight the appropriate the wireless client adapter card in the **Network Adapters** box (Figure 82).

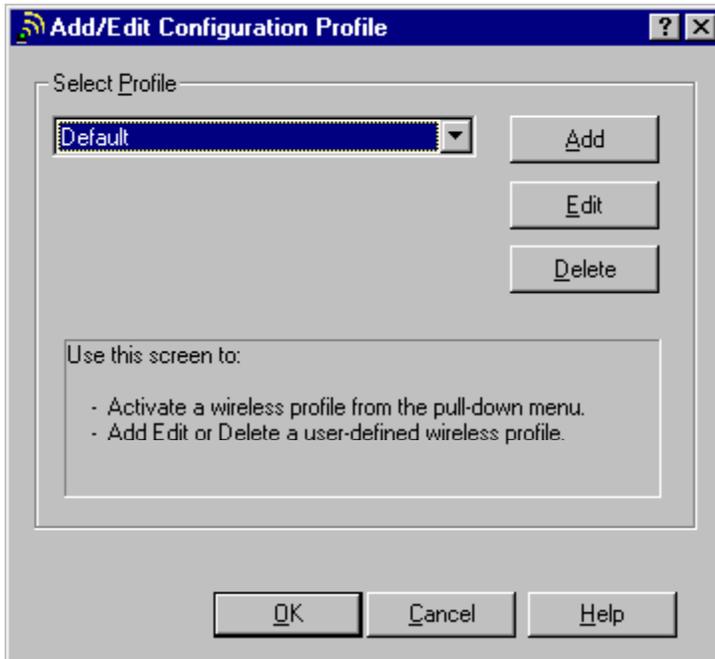
Example: Wireless PC Card (Avaya)

Figure 82. Network Window/Adapters Tab



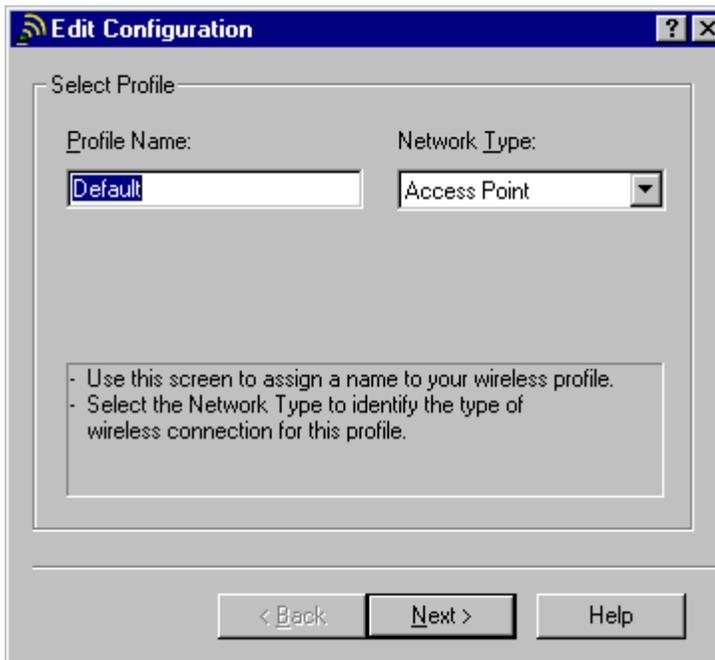
4. Click **Properties**. The **Add/Edit Configuration Profile** window is displayed (Figure 83).

Figure 83. Add/Edit Configuration Profile Window



5. Click **Edit**. The **Edit Configuration** window is displayed (Figure 84).

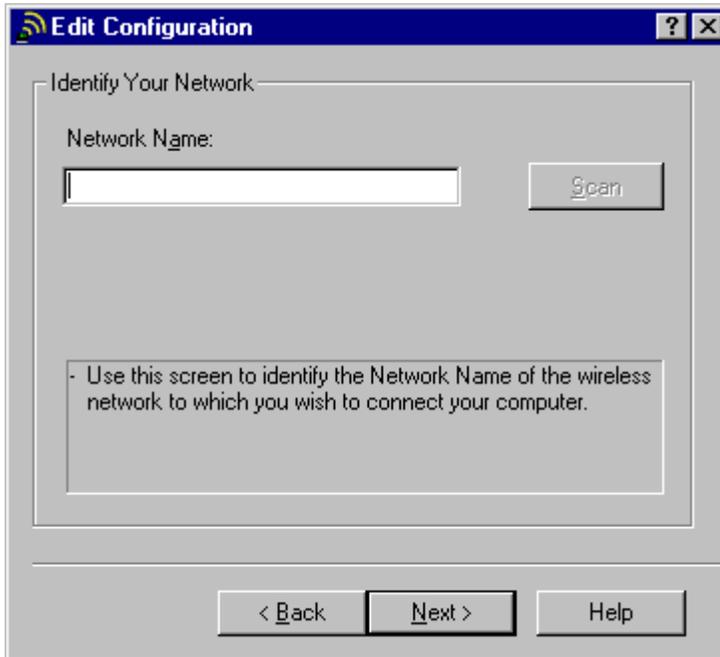
Figure 84. Edit Configuration Window



- a. In the **Profile Name** box replace the default profile name with a meaningful name.
Example: NIH Wireless LAN
- b. In the **Network Type** box select **Access Point** from the drop-down menu.

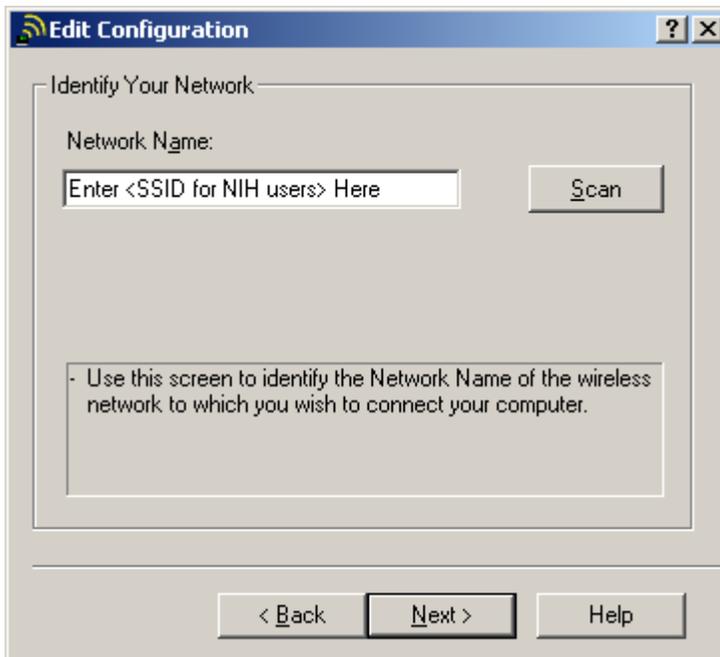
- Click **Next**. The **Edit Configuration/Identify Your Network** window is displayed (Figure 85).

Figure 85. Edit Configuration/Identify Your Network Window



- In the **Network Name** box enter the *<NIH standard SSID for NIH users>*.

Figure 86. Edit Configuration/Identify Your Network Window with SSID



- Click **Next**. The **Edit Configuration/Set Security** window is displayed (Figure 87).

Figure 87. Edit Configuration/Set Security Window

Set Security

Enable Data Security

Use Alphanumeric Characters (0-9, a-z, A-Z)

Use Hexadecimal (0-9, a-f, A-F)

Key 1

Key 2

Key 3

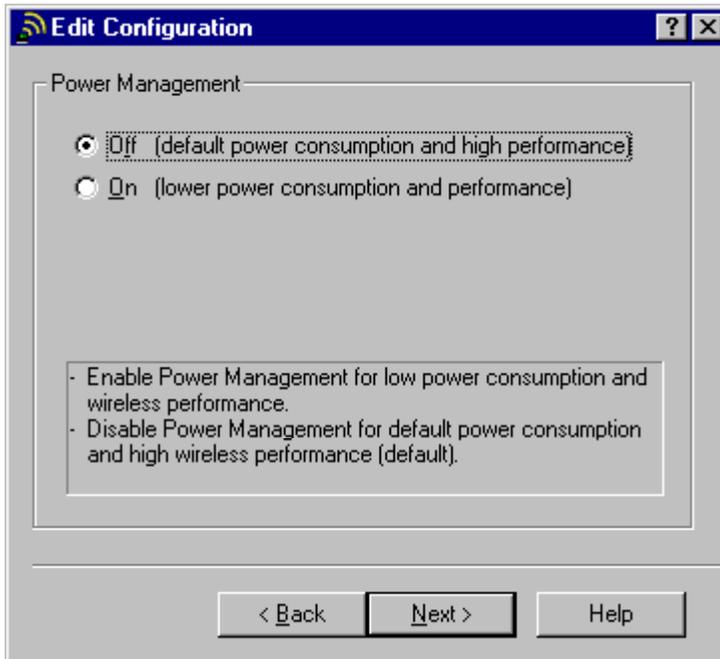
Key 4

Encrypt data with:

< Back Next > Help

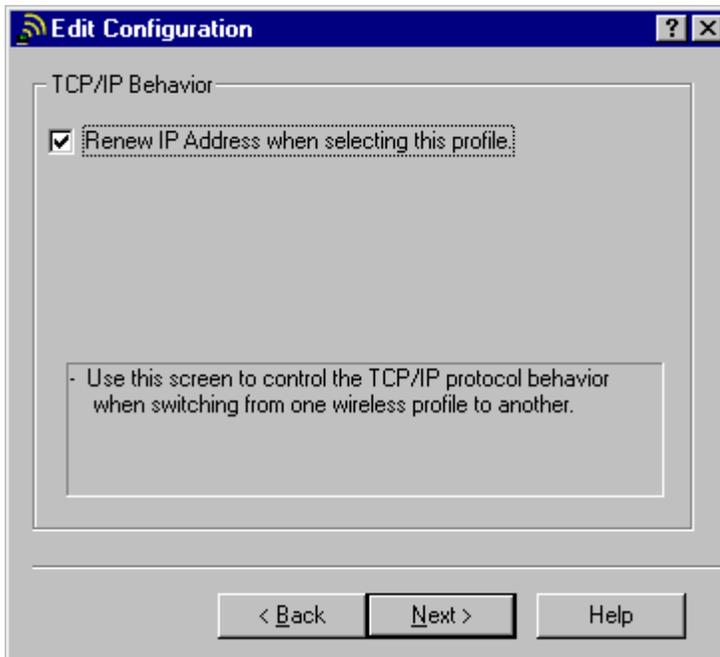
- a. Check the **Enable Data Security** checkbox.
 - b. Select **Use Hexadecimal (0-9, a-f, A-F)**.
 - c. In the **Key 1** box enter the *<NIH standard WEP encryption key>*.
 - d. In the **Encrypt data with** box select **Key 1** from the drop-down menu.
9. Click **Next**. The **Edit Configuration/Power Management** window is displayed (Figure 88).

Figure 88. Edit Configuration/Power Management Window



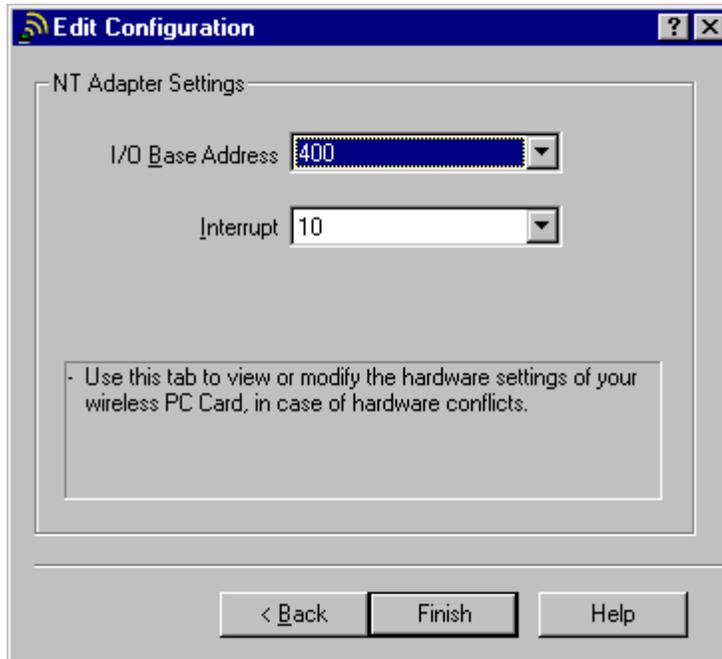
10. Select **Off (default power consumption and high performance)**.
11. Click **Next**. The **TCP/IP Behavior** window is displayed (Figure 89).

Figure 89. Edit Configuration/TCP/IP Behavior Window



12. Select **Renew IP Address when selecting this profile**.
13. Click **Next**. The **Edit Configuration/NT Adapter Settings** window is displayed (Figure 90).

Figure 90. Edit Configuration/NT Adapter Settings Window



Note: In the **I/O Base Address** and **Interrupt** boxes accept the default values (400 and 10). Make sure the hardware doesn't conflict before you click **Finish**.

14. Click **Finish**. The **Network Window/Adapters** tab is displayed (Figure 82).

Now, you need to add a new profile for access to the wireless LAN in guest and patient areas.

15. Repeat steps 4 to 6.

16. In the **Network Name** box enter the <NIH standard SSID for guest>.

17. Click **Next**. The **Edit Configuration/Set Security** window is displayed.

- a. Check the **Enable Data Security** checkbox.
- b. Select **Use Hexadecimal (0-9, a-f, A-F)**.
- c. In the **Key 1** box enter the <NIH standard WEP encryption key>.
- d. In the **Encrypt data with** box select **Key 1** from the drop-down menu

18. Repeat steps 9 to 14 to complete adding the profile for guest access.

5 Macintosh 9.x

In Macintosh 9.x you must perform two steps to install the wireless client adapter driver and configure wireless access:

- Install wireless client adapter driver
- Configure wireless access

5.1 Installing the Wireless Client Adapter Driver

Follow these steps to download and install the wireless client adapter driver.

5.1.1 Downloading the driver

1. Download the wireless client adapter driver from the CD-ROM or from the http://sdp.cit.nih.gov/downloads/wireless_lan.asp website.
2. Select **MAC OS** to download. The **Avaya Wireless.smi** icon automatically appears on the desktop after you download (Figure 91).

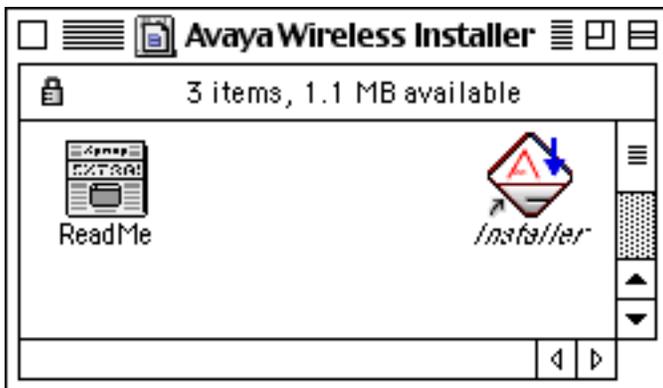
Figure 91. Avaya Wireless.smi Icon



5.1.2 Installing the driver

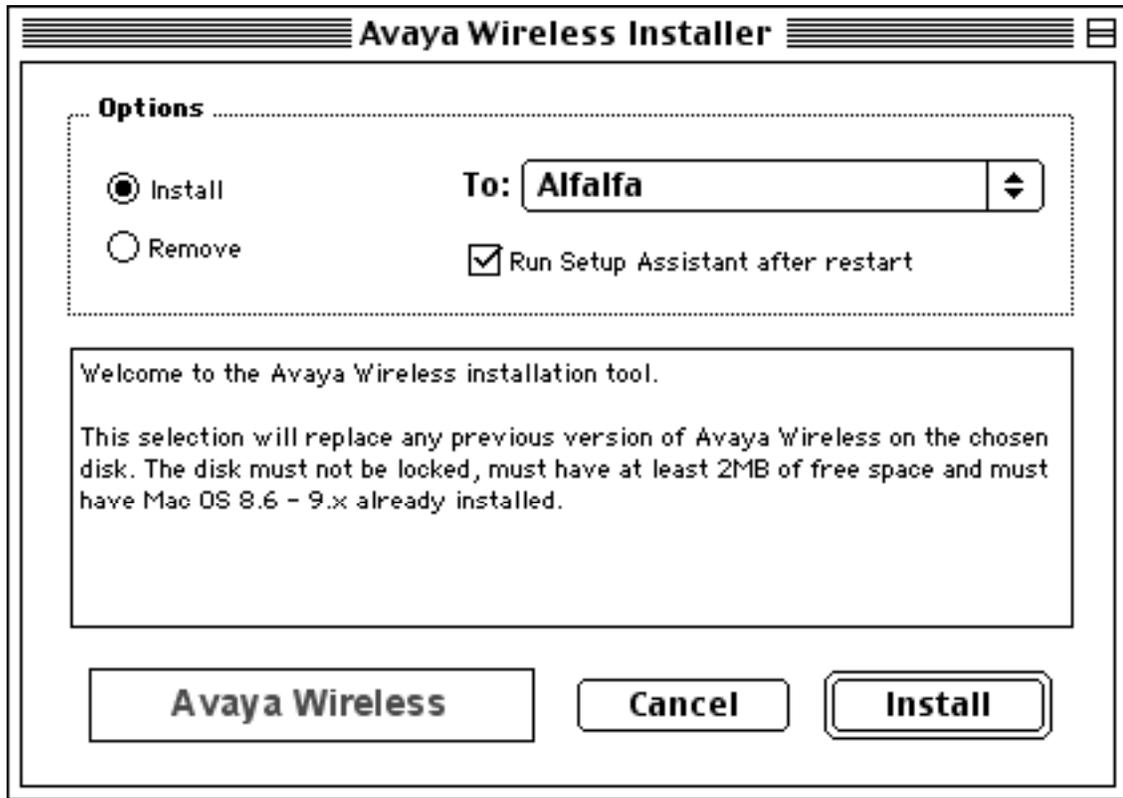
1. Double click the **Avaya Wireless.smi** icon. The **Avaya Wireless Installer** window is displayed (Figure 92).

Figure 92. Avaya Wireless Installer Window



2. Double click the **Installer** icon. The **Avaya Wireless Installer Welcome** window is displayed (Figure 93).

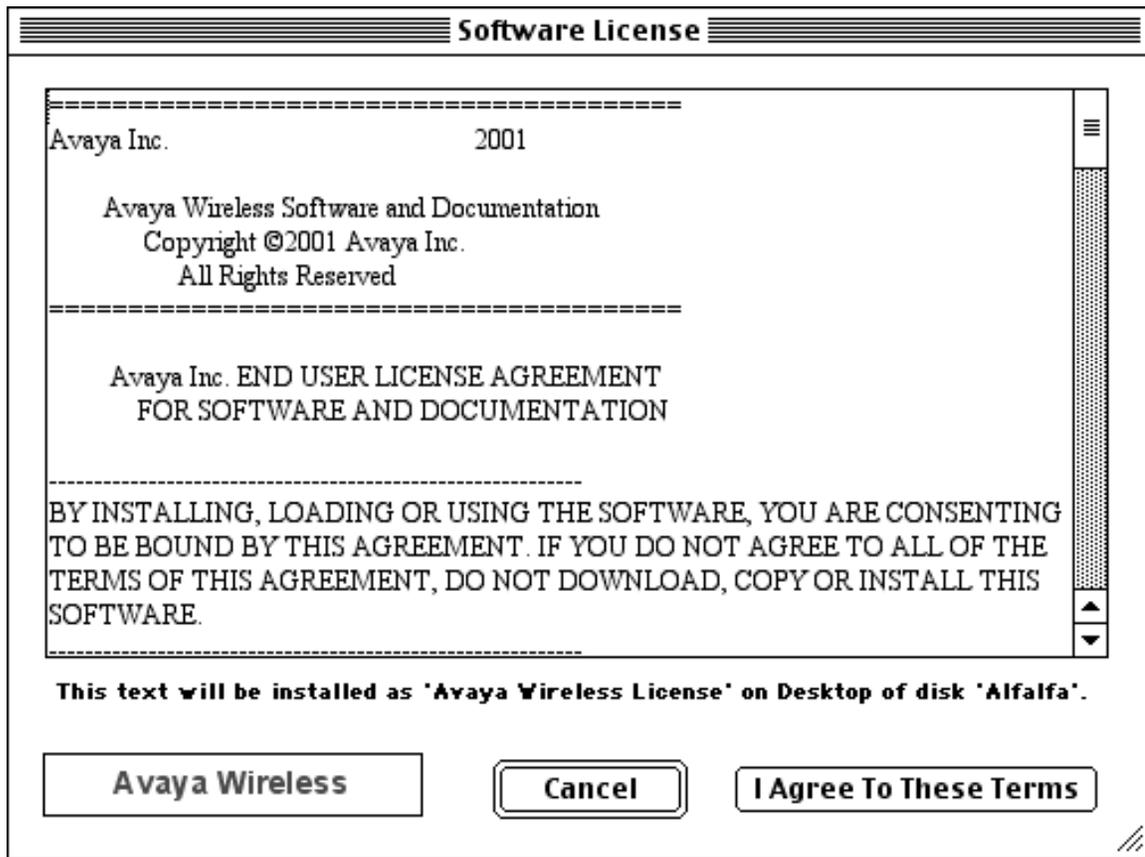
Figure 93. Avaya Wireless Installer Welcome Window



Note: In this example the name of the computer's hard disk is "Alfalpa".

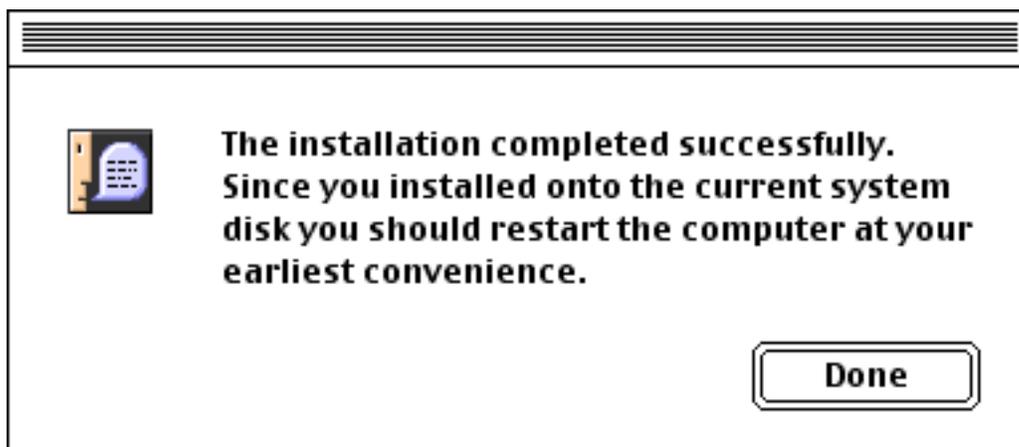
3. Click **Install**. The **Software License** window is displayed (Figure 94).

Figure 94. Software License Window



4. Click **I Agree To These Terms**. The driver will be installed. The **Installation Completed** notification window is displayed after the driver is successfully installed (Figure 95).

Figure 95. Installation Completed Notification Window



5. Click **Done**. Continue with section 5.2 to configure wireless access.

5.2 Configuring Wireless Access

Follow these steps to configure profiles to have wireless access in NIH user and guest areas.

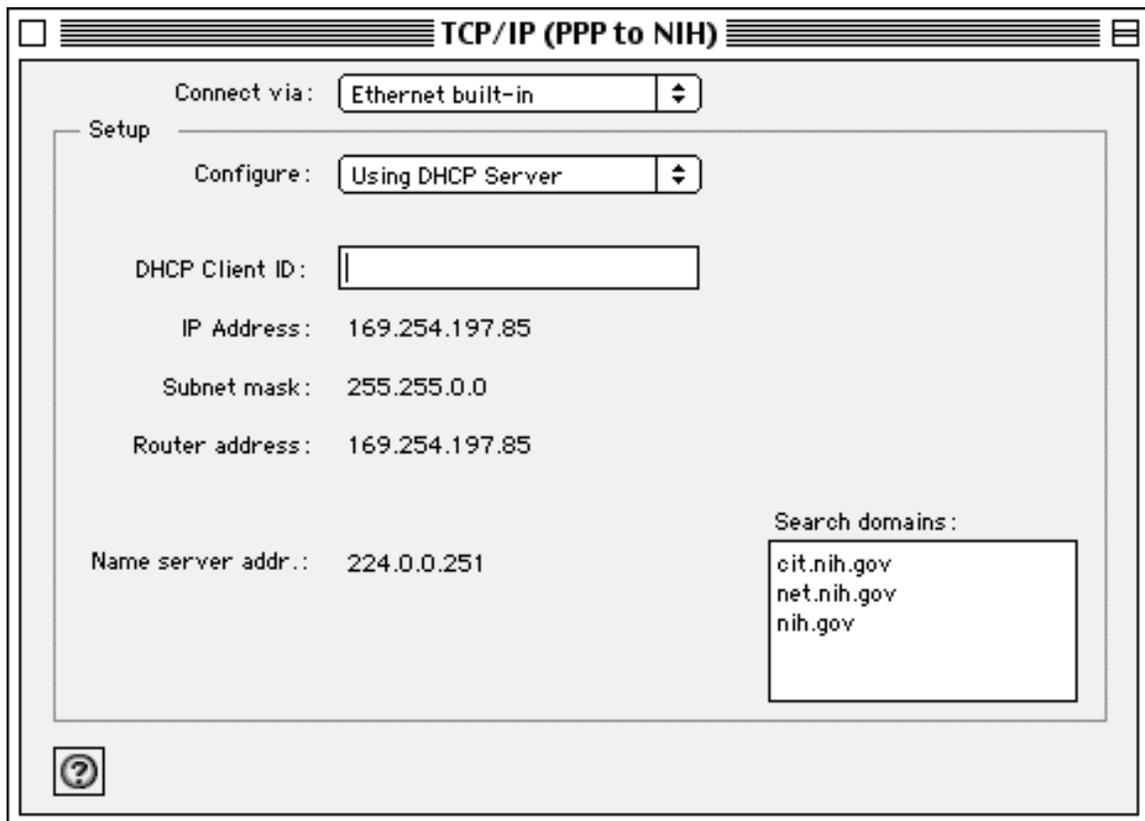
1. Insert the ORiNOCO wireless client adapter into the PCMCIA slot. The desktop



automatically displays the **Avaya Wireless** icon

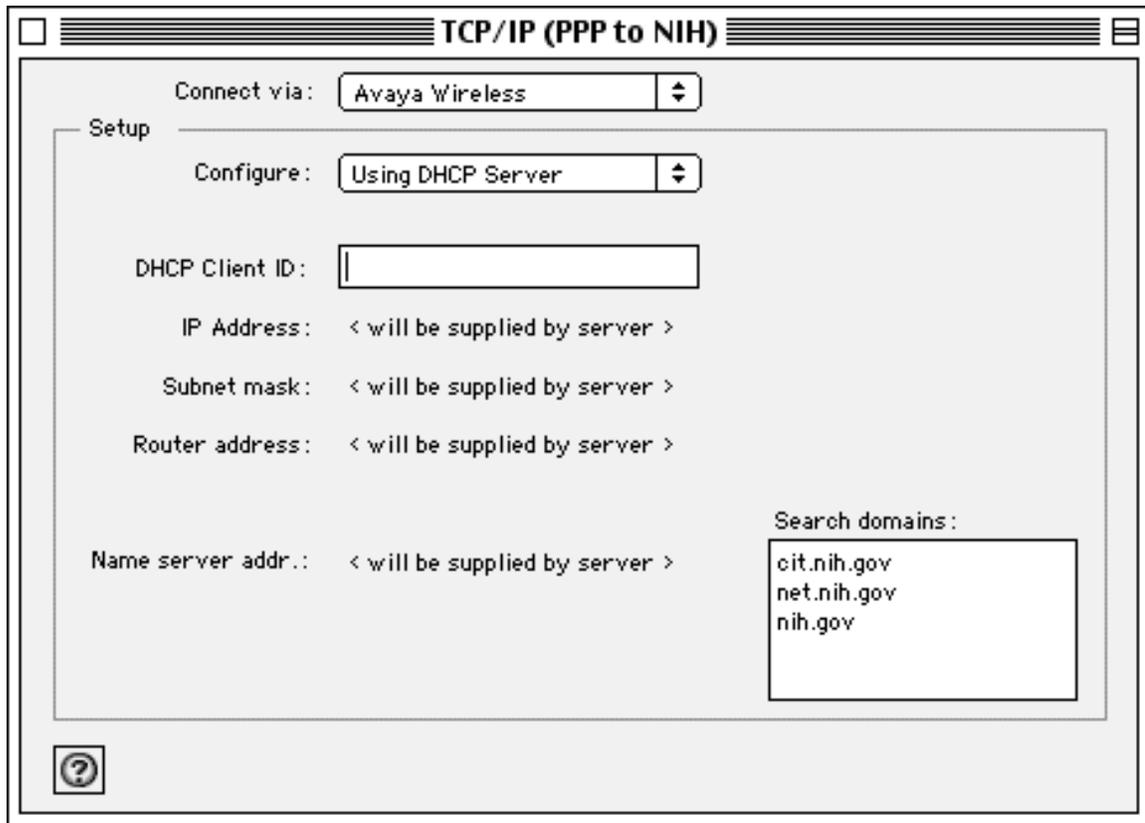
2. Double click the **Avaya Wireless** icon. The **TCP/IP (PPP to NIH)** window is displayed (Figure 96).

Figure 96. TCP/IP (PPP to NIH) Window



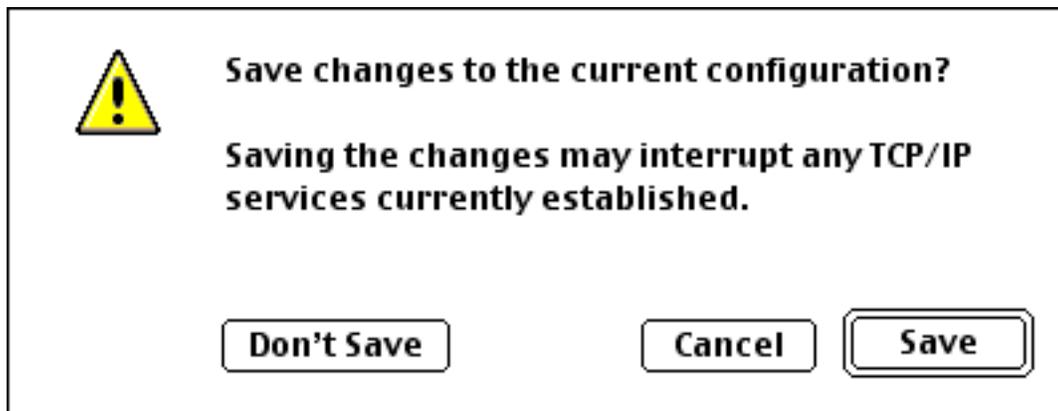
3. In the **Connect via** box select **Avaya Wireless** from the drop-down menu (Figure 97).
4. In the **Setup/Configure** box select **Using DHCP Server** from the drop-down menu.

Figure 97. TCP/IP (PPP to NIH) Window/Configuration



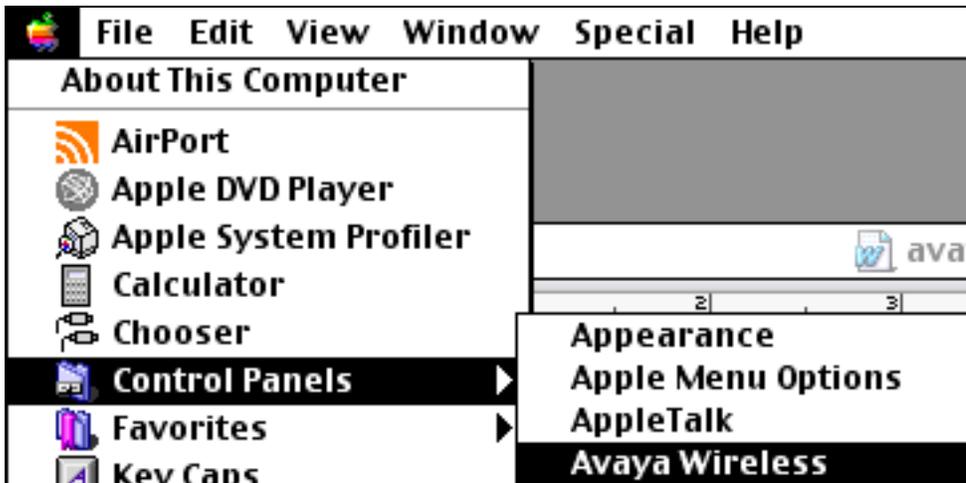
5. Click the square icon  at the top left of the **TCP/IP** window to close the window. The **Save Changes** notification window is displayed (Figure 98).

Figure 98. Save Changes Notification Window



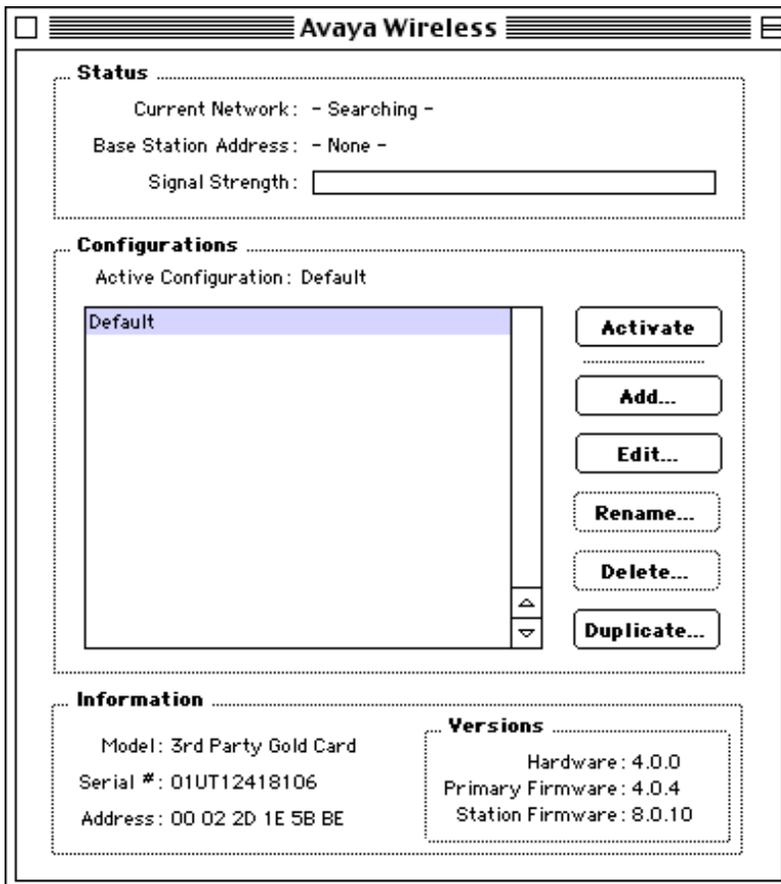
6. Click **Save**.
7. On the desktop click the Apple icon .
8. Scroll down to select **Control Panels** → **Avaya Wireless** (Figure 99).

Figure 99. Avaya Wireless Menu



The Avaya Wireless window is displayed (Figure 100).

Figure 100. Avaya Wireless Window



9. In the **Configurations** box click to highlight the **Default** profile.
10. Click **Edit**. The **Avaya Wireless (Default)** window is displayed (Figure 101).

Figure 101. Avaya Wireless (Default) Window

The screenshot shows the 'Avaya Wireless (Default)' window. At the top, there are three radio buttons: 'Access Point / Base Station' (selected), 'Computer To Computer', and 'Access Server'. Below these are two checkboxes: 'Conserve power when on battery' and 'Join a Closed Network'. Under 'Join a Closed Network', there is a text box containing 'Any Open Network'. To the left, there is a 'Use Encryption' checkbox and a 'Transmit Using' section with four keys (Key 1 to Key 4), each with a text input field and a radio button. Key 1's radio button is selected. A 'Refresh' button is located below the network selection box. At the bottom of the window, there are three buttons: 'Avaya Wireless', 'Cancel', and 'Save'.

11. Select **Access Point/Base Station**.
12. Check the **Join a Closed Network** checkbox. The **Network Name** box appears (Figure 102).

Figure 102. Avaya Wireless (Default) Window/Network Name Box

The screenshot shows the 'Avaya Wireless (Default)' window. At the top, there are three radio buttons: 'Access Point / Base Station' (selected), 'Computer To Computer', and 'Access Server'. Below these are two checkboxes: 'Conserve power when on battery' (unchecked) and 'Join a Closed Network' (checked). A 'Use Encryption' checkbox is checked, and it is enclosed in a dotted box. To its right is a 'Network Name:' text box. Below 'Use Encryption' is a 'Transmit Using' section with four key input fields: 'Key 1:', 'Key 2:', 'Key 3:', and 'Key 4:'. Each key field has a radio button next to it, with the first one selected. At the bottom of the window are three buttons: 'Avaya Wireless', 'Cancel', and 'Save'.

13. Enter the <NIH standard SSID for NIH users> in the **Network Name** box.
14. Check the **Use Encryption** checkbox.
15. Enter **0x**<NIH standard WEP encryption key> in the **Key 1** box.

Note: Be sure to enter **0x** (no space) before the WEP key. This is a special format used for the Avaya Client adapter only.

16. Click **Save**. The **Save Changes** notification window is displayed (Figure 103).

Figure 103. Save Changes Notification Window

The screenshot shows a notification window with a red octagonal icon containing a hand with a red 'X' over it. The text reads: 'You are about to save changes to the active configuration. This may interrupt your current network access. Are you sure you want to do this?'. At the bottom right are two buttons: 'Cancel' and 'OK'.

17. Click **OK**.

You have successfully configured wireless access on Macintosh 9.x for NIH user areas. Continue with the following steps to configure a profile for wireless access in NIH guest/patient areas.

18. On the **Avaya Wireless** window (Figure 100) click **Add**. The **Please enter a new name for this configuration** window is displayed.

19. Enter a meaningful name for this profile, then click **OK**.

Example: NIH Wireless for Guest

20. Repeat steps 11 and 12.

21. Enter the *<NIH standard SSID for guest>* in the **Network Name** box.

22. Repeat steps 14 to 17 to complete the configuration process.

Congratulations! You have finished configuring the wireless access profiles for NIH users and NIH guest/patient areas. Select the appropriate profile on the **Avaya Wireless** window for access in NIH user or guest/patient areas, depending on your location.